# Archaeological Material Analysis of FjCa-51, Area 11 Sheshatshiu, Labrador

By:

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# Memorial University of Newfoundland and Labrador Land Acknowledgement

We respectfully acknowledge the territory in which we gather as the ancestral homelands of the Beothuk, and the island of Newfoundland as the ancestral homelands of the Mi'kmaq and Beothuk. We would also like to recognize the Inuit of Nunatsiavut and NunatuKavut and the Innu of Nitassinan, and their ancestors, as the original people of Labrador. We strive for respectful relationships with all the peoples of this province as we search for collective healing and true reconciliation and honour this beautiful land together.

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# Abstract

Excavation at archaeological site FjCa-51 in Sheshatshiu, NL has been ongoing since 2009, at the request of the Sheshatshiu Innu First Nation. FjCa-51 is reported to be one of the most significant Intermediate period (3500-1800 BP) archaeological sites in Labrador with fifteen different loci excavated to date. As most of the cultural material of the Intermediate period is lithics, an analysis following a chaîne opératoire approach was completed in order to understand site use, movement and/or trade across the land, and how Area 11 fits into the existing Intermediate period classifications. Residue analysis was completed on five anvil stones in order to discern whether the analysis would provide results regarding the processing of organic materials on site. The results suggest that Area 11 was a short-term habitation site that saw only a single occupation that had both local and non-local stone raw materials suggestive of movement or trade. The artifacts are also a mixture of diagnostically Charles and Brinex complexes, now considered the Saunders phase, so Area 11 has been placed into this phase. Results were obtained from the residue analysis providing evidence for cold season grasses and possible bison processing on site. All of the above analyses are discussed together in order to fully understand how Area 11 of FjCa-51 was utilized.

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# Chapter 1 – Introduction to Research

Archaeological site FjCa-51 is located within Sheshatshiu, Labrador, Canada (Figure 1.1). FjCa-51 is a significant Intermediate period First Nation site excavated at the request of the Sheshatshiu Innu First Nation to mitigate impacts to the site stemming from infrastructure development within the community, which is a Federal Reserve.


**Figure 1.1 – Close up map of Sheshatshiu and North West River, Labrador**

Over 200 archaeological sites have been identified thus far in Labrador that date to the time period between 3500-1800 years before present (B.P) (Stephen Hull, personal communication 2021), which is known as the Intermediate period. It is named the Intermediate period as it is situated between the Early and the Late period, also referred to as the Recent period in Newfoundland (Stopp 2008). Within this introductory chapter, I discuss the history of archaeology in Labrador and the Quebec Lower North Shore including locations such as Muskrat Falls, Ramah Bay, Blanc Sablon, as well as Port aux Choix located on the Island of Newfoundland, (Figure 1.2), the history of archaeological research in Sheshatshiu, and excavation Area 11 at archaeological site FjCa-51.

**1.1 Archaeology in Labrador and the Quebec Lower North Shore**

Glacial ice in Labrador began to retreat ca. 10,000 years before present (B.P) with certain coastal areas suitable for occupation ca. 6000 – 8000 years B.P (Fitzhugh 1975, 2006; Josephs and Neilsen 2009). The first evidence of habitation in Labrador comes ca. 9000 years B.P (Fitzhugh 1972; McGhee and Tuck 1975; Neilsen 2006), with evidence for habitation of the Hamilton Inlet by 5500 years B.P (Fitzhugh 1975, 2021). The 5500-year history of habitation in central Labrador was divided into three distinct periods by William Fitzhugh: Early, Intermediate, and Late (Fitzhugh 1972), and archaeologists working in the region have tended to follow this structure when referring to First Nation archaeological cultures (Fitzhugh 2006; Loring 1992; Stopp 2008) (refer to Table 1.1). Paleo-Inuit and Inuit archaeological cultures are also present in Labrador during these periods and include the Pre-Dorset (4200-3000 years before present), Groswater (3000-1800 years before present), Dorset (2500-1200 years before present) and Inuit (600-250 years before present) (Betts and Hrynick 2021). Over the more than 40 years since this

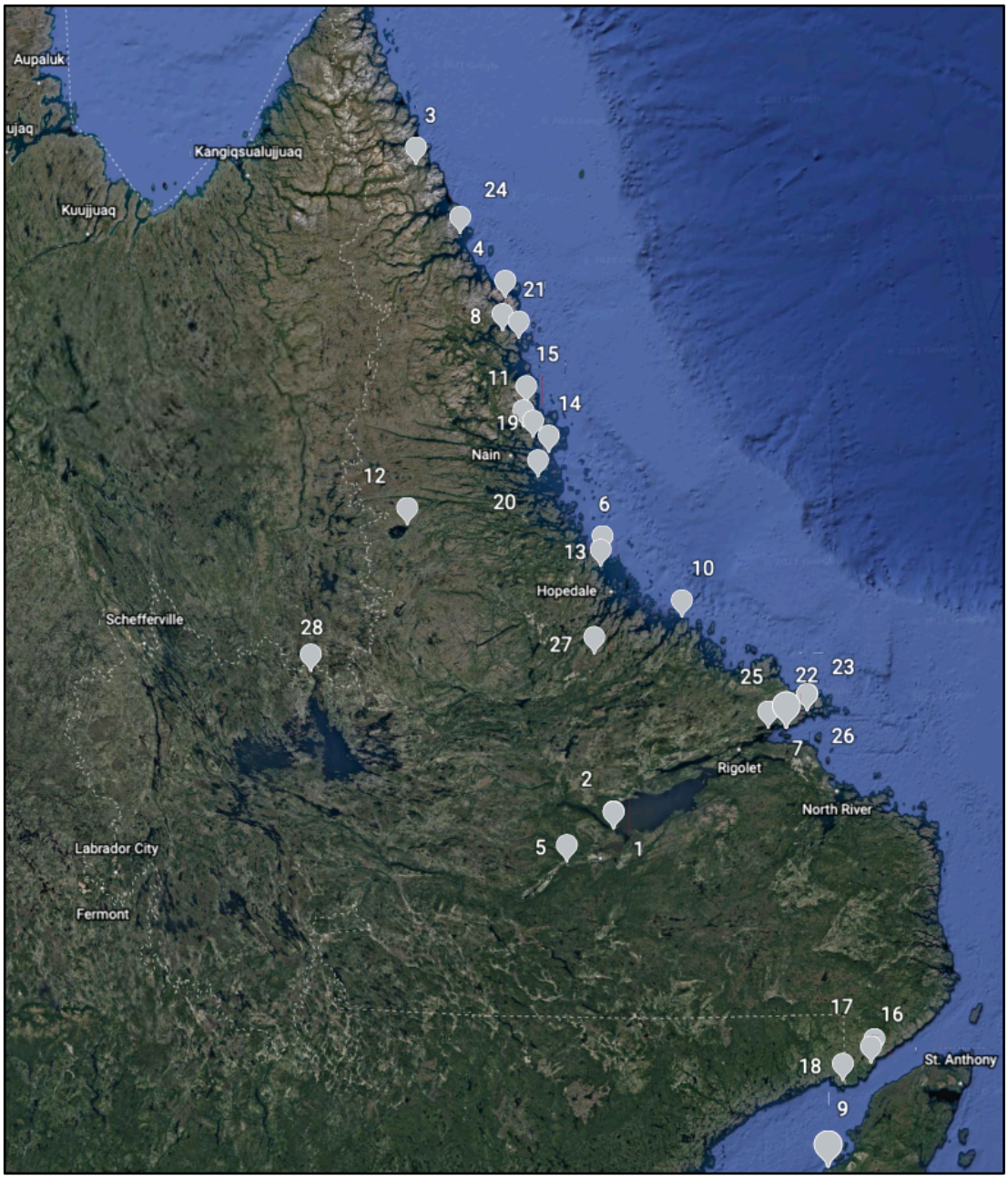



**Figure 1.2 - Places mentioned in the text**: 1) *Sheshatshiu*, 2) *North West River*, 3) *Ramah Bay*,4) *Kaumajet Mountains*, 5) *Muskrat Falls*, 6) *Windy Tickle*, 7) *West Pompey Island*, 8) *Okak Island*, 9) *Port aux Choix*, 10) *Aillik*, 11) *Black Island Cove*, 12) *Shanapeu Ushipisim*,13) *Napatalik*, 14) *Karl Oom 2 & 3*, 15) *Thalia Point*, 16) *Iceberg site*, 17) *Black Rock Brook*, 18) *Blanc Sablon*, 19) *Ballybrack*, 20) *Nukasusutok*, 21) *Cutthroat 2*, 22) *Groswater Bay*,23) *Rattler's Bight*, 24) *Nulliak*, 25*) Sandy Cove*, 26) *Hound Pond*, 27) *Marshall Falls*, 28) *Ptarmigan Point*

cultural chronology was first proposed, there have been changes to the timing of periods and the archaeological culture descriptions (see section 2.2) discussed by William Fitzhugh, but the overall structure has remained the same (Betts and Hrynick 2021; Fitzhugh 2006).

**Table 1.1 – Time Periods and First Nation Archaeological Cultures of Labrador (adapted from Fitzhugh 2006; Fitzhugh 1972; Loring 1992)**

| Time Period | Archaeological Cultures | Time Frame |
|---|---|---|
| Early period | *Early Labrador Maritime Archaic*<br>*Middle Labrador Maritime Archaic*<br>*Late Labrador Maritime Archaic* | 7500-3500 years B.P |
| Intermediate period | *Little Lake Component*<br>*Brinex Complex*<br>*Charles Complex*<br>*Road Component*<br>*David Michelin Component*<br>*North West River Phase*<br>*Saunders Complex* | 3500-1800 years B.P |
| Late period | *Point Revenge*<br>*Daniel Rattle* | 1800 – 400 years B.P |

*Early Period*

The Labrador Maritime Archaic period lasts from 7500 years B.P to 3500 years B.P and is part of the larger Maritime Archaic (MA) tradition (Fitzhugh 2006). The Maritime Archaic cultures are some of the earliest in the Far Northeast (Atlantic Canada, Newfoundland and Labrador, and New England) and are distributed along the Gulf of St. Lawrence and Atlantic Ocean coasts (Betts and Hrynick 2021; Tuck 1976). The Early period saw large multi-segmented long houses, elaborate burials such as those at Port aux Choix and Rattler's Bight, and the use of Ramah chert (Holly 2013; Tuck 1976; Renouf 2017; Wolff 2008). The MA archaeological tradition in Newfoundland and Labrador (Maritime Archaic and Labrador Maritime Archaic) show regional variation, but there

remains a marine adaptation/ lifestyle throughout (Betts and Hrynick 2021; Fitzhugh 2006; Lacroix 2015). This is further solidified by the presence of tools and symbolically carved objects found in burials, including toggling harpoons, barbed sealing harpoons, barbed leisters, bird effigies, and killer whale effigies (Betts and Hrynick 2021; Holly 2013; Tuck 1976).

The Labrador Maritime Archaic is broken into three distinct episodes including the Early Labrador Maritime Archaic from 7500-6000 years B.P, to the Middle Labrador Maritime Archaic from 6000-4200 years B.P, to the Late Labrador Maritime Archaic from 4200-3500 years B.P (Fitzhugh 2006; Holly 2013). The Early Labrador Maritime Archaic (7500-6000 years B.P) sites are: Hound Pond (GcBi-16), West Pompey Island (GbBm-2), Karl Oom 2 (HdCg-38), Karl Oom 3 (HdCg-39), Alliak 2 (GhBt-3), Black Island Cove (GcBk-9, GcBk-10, GcBk-15), and Ballybrack (HeCi-11) (Figure 1.2). These sites see a transition from circular dwellings to rectangular ones with multiple segments ca 6000 years B.P. (Betts and Hrynick 2021; Fitzhugh 2006; Holly 2013; Wolff 2008). These sites also present with Ramah chert, ground slate, and red ochre. The Middle Labrador Maritime Archaic (6000-4200 years B.P) sites are: Nukasusutok 5 (HcCh-7), Cutthroat 2 (HiCj-5), Okak 2 (HjCl-2), Sandy Cove 4 and 5 (GcBk-4, GcBk-5), and Nulliak Cove 1 (IbCp-20) (Fitzhugh 2006). This time period includes a technological complex that utilized stemmed points, slotted ulus, ground stone celts, and ground pecking stones. The main raw materials utilized were slate and Ramah chert, and long houses were more prevalent. This time period also saw regional variations (Fitzhugh 2006; Lacroix 2015). The northern branch of the Late Labrador Maritime Archaic (4200-3500 years B.P) is based upon excavations in Groswater Bay at Rattlers Bight (Fitzhugh

2006). Sites pertaining to Rattlers Bight have been found at Aillik, Napatalik, and Windy Tickle. The most common technology present on these sites was either micro points created from flakes, or larger bifacial points that had a flat/rounded base, a tapered stem, and sharp shoulders (Fitzhugh 2006). The southern branch of the Late Maritime Archaic encompassed the Strait of Belle Isle and appears to extend into the eastern portions of the Quebec Lower North Shore (also called the Bonne-Espérance complex (Betts and Hrynick 2021; Pintal 1998)). Both the southern and northern manifestations of the Late Maritime Archaic inhabited the same landscape and interacted with one another but remained distinct (Betts and Hrynick 2021). The technology, made from weathered white chert, quartzite, and slate, was very similar with blade-like flakes, a unifacial flaking industry, axes, gouges, adzes, and slate spear points (Betts and Hrynick 2021). The Southern Branch sites appear to be small single use camps that were only occupied for a short amount of time, with no evidence of dwellings (Betts and Hrynick 2021).

### *Intermediate Period*

The Intermediate period in Labrador spans from approximately 3500-1800 years B.P. Sites from this period have been found within Hamilton Inlet, on the coast of Labrador, and within the interior (Fitzhugh 1972; Fitzhugh and Martin 2021; Madden 1976; Nagle 1978; Neilsen 2006; SSLP 2019a). The sites usually consist of cobble hearths (sometimes paired) and stone artifacts made from quartzite, chert, and quartz. Fitzhugh originally suggested a classification scheme for these sites (Table 1.1); however, more research is underway on the Intermediate period, and Fitzhugh's original culture history is being updated. There is a growing consensus with calling the period between 3500 – 2700 years before present the Saunders phase, with Neilsen (2006) suggesting the

time period of 2600-1800 years before present as the Northwest River phase (Fitzhugh and Martin 2021; Nagle 1978; Neilsen 2006; SSLP 2019). A more in-depth discussion on the Intermediate period is presented in section 2.2.

### *The Late Period*

Marianne Stopp (2008) used the term Late Precontact Amerindian to describe the Daniel Rattle and Point Revenge archaeological cultures of the Late period. The Daniel Rattle complex dates to ca. 2000-1000 years B.P., and the Point Revenge complex dates to ca. 1000-350 years B.P. (Brake 2007; Hull 2002; Loring 1992). These two complexes are similar, and the name designations are used to refer to the different time period rather than completely separate groups (Loring 1992). As such, one can discuss settlement patterns for both archaeological cultures together and look at change over time. The sites are found in various environmental and geographical locations such as sheltered bays, dense boreal forest, and exposed headlands (Hull 2002). This combined with the technology (large lanceolate bifaces, broad and side notched projectile points, end scrapers, thumbnail scrapers, and side scrapers), faunal remains (seal, caribou, fish, duck, bear), and the raw material used (such as slate and Ramah chert) points to a modified interior settlement pattern, which included a reliance on both interior and coastal environments. The common feature found at Late period sites are hearths in the form of a cluster of stones, a ring, or a larger oval shape (Brake 2007; Hull 2002; Loring 1992; Stopp 2008). Structures have also been excavated in the form of a multi-family longhouse, similar to a historic Innu shaputuan (Brake 2007; Holly 2013), with multiple hearths or smaller dwellings with a single hearth, as well as potential ceremonial structures (Brake 2007; Holly 2013; Hull 2002; Loring 1992; Neilsen 2016).

The Daniel Rattle complex diagnostic tools are large bifaces with broad side notches which slowly give way to smaller bifaces with corner notched bases, ground slate celts, as well as unifacially worked side and end scrapers (Brake 2007; Hull 2002; Loring 1992). These tools are also very similar to the diagnostic tools of Little Passage and Beaches complexes in Newfoundland, and other complexes within Quebec (specifically the Lower North Shore) (Erwin et al. 2005). The similarities suggest these contemporaneous archaeological cultures were fluid. The Daniel Rattle complex also saw multi-family longhouses being used (Loring 1992:334). The Point Revenge complex diagnostic tools are small convex-based corner-notched points with asymmetric notches, flake scrapers, flake knives, large corner notched spear points with flat bases, and ground slate celts (Fitzhugh 1972; Hull 2002; Loring 1992).

*Lower North Shore*

It is necessary to briefly discuss the precontact First Nation cultures on the Quebec Lower North Shore due to their proximity to Labrador and the fact that the current provincial border between the two regions did not exist before 1929. There are four complexes associated with the Early-Middle Archaic (1), the Middle Archaic (2), and the Late Archaic (3 and 4): 1) the Letemplier complex (8500-6500 B.P), 2) the Blanc-Sablon complex (6500-5000 B.P), 3) the Bonne-Espérance complex, and 4) the La Tabatière complex (Pintal 1998). The chronological framework for these complexes is based upon tool forms and the raw material that was used. There are also five late precontact Amerindian complexes: the Flèche Littorale complex (2500 – 1500 B.P), the Petite Havre complex (1500- 1200 B.P), the Longue Pointe complex (1300-1100 B.P), the Anse Lazy complex (1200-1100 B.P), and the Anse Morel complex (1000 B.P – present)

(Pintal 1998). These complexes, Pintal (1998) argues, are related to one another with the Flèche Littorale and Petite Havre complexes also being related to the Cow Head complex on the island of Newfoundland. These cultural groups, between 2500-1100 B.P, were also in contact with one another, culminating in the changes seen in the archaeological record. As the Late Precontact period continued, there is a marked, and steadily growing, reliance on Newfoundland and Labrador raw materials within the Blanc Sablon region suggesting increasing contact with the Amerindian people living in Newfoundland and Labrador at the time, or increased mobility (Brake 2007; Pintal 2001; Stopp 2008). Tools associated with the Logue Pointe complex are similar to tools associated with the Daniel Rattle complex, and the Anse Lazy complex is similar to the Point Revenge complex (Brake 2007).

**Table 1.2 – Time Periods and Archaeological Cultures of the Quebec Lower North Shore**

| Time Period | Complexes | Time Frame |
|---|---|---|
| Early-Middle Archaic | *Letemplier* | 8500-6500 years B.P |
| Middle Archaic | *Blanc-Sablon* | 6500-5000 years B.P |
| Late Archaic | *Bonne-Espérance*<br>*La Tabatière* | |
| Late Precontact Amerindian | *Flèche Littorale*<br>*Petite Havre*<br>*Longue Pointe*<br>*Anse Lazy*<br>*Anse Morel* | 2500-1500 years B.P<br>1500-1200 years B.P<br>1300-1100 years B.P<br>1200-1100 years B.P<br>1000 years B.P - Present |

### 1.2 Previous Research in Sheshatshiu, Labrador

After Fitzhugh's excavations in North West River during the late 1960's, limited archaeology was conducted in the region until the 1990's. Archaeological work in Sheshatshiu started with Cultural Resource Management surveys undertaken by Jacques

Whitford Environmental Ltd in 2000 and by Fred Schwarz in 2003 (BSHS 2004). These surveys ultimately revealed 16 new archaeological sites in the area. Schwarz (BSHS 2004) also recorded and assessed the Intermediate period site Shehsatshiu-3 (FjCa-51) that was uncovered and disturbed by road work within the community (refer to Tables 1.3 and 1.4). Following this, Dr. Schwarz, undertook an archaeological assessment and inventory within the Sheshatshiu Innu First Nation boundaries in preparation for Sheshatshiu to become a recognized reserve in 2003 (BSHS 2004; Neilsen 2010a). Sixteen new Intermediate period sites were recovered during the investigation, with two (FjCa-51 and FjCa-53) showing signs of disturbance or complete destruction (BSHS 2004). Due to disturbance and destruction of FjCa-51 and FjCa-53 respectively, there were also 19 locations where artifacts were discovered, including in topsoil that was taken from FjCa-53 and distributed to residents (BSHS 2004, 2019). Dr. Scott Neilsen has since overseen extensive excavation work at FjCa-51 (Neilsen 2010a, 2010b, 2011a, 2011b, 2013, 2014, 2017; Neilsen et al. 2018; Neilsen et al. 2019). The excavations at FjCa-51, starting in 2009, were undertaken at the request of the Sheshatshiu Innu First Nation as a salvage archaeology project due to infrastructure development within the community.

**Table 1.3 Definitive Intermediate Period Sites Recorded in Sheshatshiu**

| Borden Designation | General Site Name | Year Recorded | Elevation |
|---|---|---|---|
| FjCa-48 | Sheshatshiu 1 | 1999 | 14-18m asl |
| FjCa-50 | Sheshatshiu 2 | 1999 | 15m asl |
| FjCa-51 | Sheshatshiu 3 | 2002 | 19m asl |
| FjCa-56 | Sheshatshiu 7 | 2003 | 16m asl |
| FjCa-57 | Sheshatshiu 8 | 2003 | 21m asl |
| FjCa-58 | Sheshatshiu 9 | 2003 | 23m asl |
| FjCa-61 | Sheshatshiu 12 | 2003 | 18-20m asl |
| FjCa-62 | Sheshatshiu 13 | 2003 | 16-17m asl |

| Borden Designation Cont'd | General Site Name Cont'd | Year Recorded Cont'd | Elevation Cont'd |
|---|---|---|---|
| FjCa-65 | Sheshatshiu 16 | 2003 | 17m asl |
| FjCa-66 | Sheshatshiu 17 | 2003 | 18-20m asl |
| FjCa-67 | Sheshatshiu 18 | 2003 | 18-20m asl |
| FjCa-68 | Sheshatshiu 19 | 2003 | 17-19m asl |
| FjCa-69 | Sheshatshiu 20 | 2009 | 20m asl |
| FjCa-70 | Sheshatshiu 21 | 2009 | 20m asl |
| FjCa-72 | Sheshatshiu 23 | 2009 | 15m asl |
| FjCa-74 | Antu West 13 | 2014 | 12m asl |
| FjCa-76 | Antu East 25 | 2014 | 9m asl |

Adapted from Black Spruce Heritage Services 2019:14.

**Table 1.4 Potential Intermediate Period Sites Recorded in Sheshatshiu**

| Borden Designation | General Site Name | Year Recorded | Potential Culture | Elevation *(above sea level)* |
|---|---|---|---|---|
| FjCa-59* | Sheshatshiu 10 | 2003 | Maritime Archaic or Intermediate period | 33m asl |
| FjCa-60* | Sheshatshiu 11 | 2003 | Maritime Archaic or Intermediate period | 33m asl |
| FjCa-63* | Sheshatshiu 14 | 2003 | Maritime Archaic or Intermediate period | 29m asl |
| FjCa-71 | Sheshatshiu 22 | 2009 | Maritime Archaic or Intermediate period | 22m asl |

Adapted from Black Spruce Heritage Services (2019:14).
*May be a poorly defined Maritime Archaic sites or a period of transition between Archaic and Intermediate occupation.

## 1.3 FjCa-51

Archaeological site FjCa-51 consists of 16 excavation areas situated within Sheshatshiu, Labrador with an age range from 2860 ± 30 years B.P. (Beta-371307) to 3380 ± 30 years B.P. (Beta-371323). The age range for Area 11 is 3160 ± 30 years B.P (Beta-371321) to 3310 ± 30 years B.P. (Beta-371322). Figure 1.3 illustrates the location of Area 11 (circled in red) in relation to the other excavation areas associated with FjCa-51. For this thesis, the assemblage recovered from Area 11 of FjCa-51 was analysed to provide information related to the occupation of this locale, and regarding Intermediate

Amerindian archaeological history more generally. The assemblage, consisting of 1067 specimens of stone and samples was excavated by Dr. Scott Neilsen, Angela Cole, Jodie Ashini, Ann-Marie Andrews, and Anthony Jenkinson in August and September of 2010 (Figure 1.4).

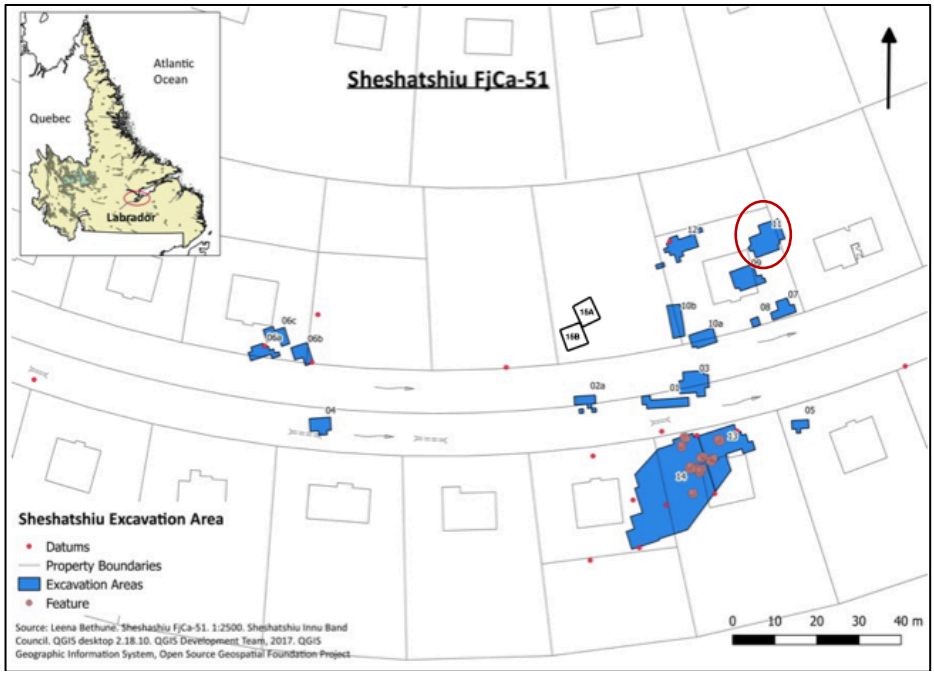



**Figure 1.3 – Map of FjCa-51 with Area 11 circled in red (map adapted from Neilsen et al. 2018)**


**Figure 1.4 – Area 11 of archaeological site FjCa-51with Feature Area 1 (top left) and Feature Area 2 (bottom right) highlighted (photo courtesy of Scott Neilsen)**

The analysis of the assemblage was undertaken by the author and Jay Andrew during the summers of 2019 and 2020. The analysis included stone tool and residue analysis, with the aim of understanding how Area 11 of FjCa-51 was used, how it fits into current Intermediate period history, and if residue analysis is a viable method of analysis for future researchers studying the Intermediate period.

### 1.4 Research Objectives

The overarching goal of the analyses is to understand Area 11 of site FjCa-51 as well as the Intermediate period in Labrador. The following research questions were used to guide this research:

1) *How were the artifacts distributed within the site and what does this show about site use?*

   To answer this question, I have analysed all lithic artifacts within the excavation and plotted each lithic material within a site map (Figure 4.1). The artifacts were mapped based on numerous parameters including raw material, artifact type, colour, and manufacturing techniques. This allowed for the visualization of potential work areas based upon the artifacts present.

2) *Where were the lithics sourced and what can be inferred about movement and/or trade?*

   To answer this question, I analyzed all artifacts based on material, colour, type of artifact, and quantity. This allowed for inferences regarding whether the material was from a local source or from farther away, if the material was easily accessible

and therefore widely used and discarded quickly or if the material was used to its full potential before being discarded.

3) *How does FjCa-51 fit into the pre-existing history of the Intermediate period?*

   To answer this question, I completed a comprehensive literature review before starting the analysis of the assemblage. Once the analysis was completed, I compared the results obtained to the current understanding of the Intermediate period.

4) *Were the anvil stones used for processing organic materials, and if so, what was being processed on them?*

   To answer this, five anvil stones were collected from Area 11 and tested for any organic material on the surface of the stones. The residue was extracted in the Archaeological Sciences Laboratory in Fredericton, New Brunswick before being sent to the PaleoResearch Institute for complete analysis.

5) *Does the size of the anvil affect what materials are processed on it?*

   To answer this, I took residue samples from each anvil stone and tested them for proteins, starches, and phytoliths. This information was then analysed alongside the size and weight of each anvil stone to see if there was a correlation between size and organic material processing.

6) *Should future researchers of the Intermediate period use residue analysis on anvil stones or other artifacts, and what materials should they test for?*

   To answer this, I completed the residue analysis on the five anvil stones and then weighed the cost and effort of the residue analysis to the importance and validity of the results that were obtained.

## 1.5 Thesis Outline

This thesis is divided into five chapters, including this first chapter briefly outlining the structure of the thesis. Chapter two provides a background on archaeological research undertaken in the Intermediate period (classifications system, environment, and raw material sources), site FjCa-51, and Area 11. Chapter three summarizes the theoretical concept of chaîne opératoire including the history behind the theory and how it is applied to the analyses completed in this thesis. A discussion regarding stone tool analysis, the terminology utilized, and the methodologies used will close out this chapter. Next, chapter four presents the results of all analyses organized under the categories of full assemblage, tools, debitage, residue analysis, and samples. Each section has a discussion associated with it, then another discussion of the results, and their implications, is presented at the end of the chapter. Lastly, chapter five explores how the results presented in chapter four helped to answer the six research questions listed above.

# Chapter 2: Background Information

This research is focused on Area 11 of the Intermediate period archaeological site FjCa-51. This chapter provides an overview of the Intermediate period in Labrador and includes descriptions of the past and present environmental conditions of Hamilton Inlet, where FjCa-51 is located, including deglaciation, vegetation, and fauna. The chapter concludes with a description of FjCa-51 and Area 11.

## 2.1 Intermediate Period

William Fitzhugh, of the Smithsonian Institution, has been credited with coining the term Intermediate period in Labrador. His 1972 monograph outlines the major archaeological work he undertook in Hamilton Inlet starting in 1968 and 1969 (Fitzhugh 1972, 1973, 1975). Since then, other academic research on the Intermediate period has taken place (see Brake 2006; Madden 1976; Nagle 1978; Neilsen 2006, 2010, 2011, 2013, 2017; Stopp 1997; Wolfrum 2019), as well as cultural resource management (CRM) projects, most notably in association with hydroelectric development in central Labrador (IED & JWEL 1999; Innu Environmental Limited Partnership 2002, 2003; JWEL & IE 2001; Schwarz 1998; Stassinu Stantec Limited Partnership 2014a, 2014b, 2016, 2019a, 2019b (SSLP)). At present, there is a total of 256 Intermediate Amerindian period sites in Labrador, 185 are confirmed (having diagnostic features of the Intermediate period) with 71 unconfirmed (not fully able to be assigned to a specific time within the Intermediate period), as well as three sites in Newfoundland, one is confirmed and two unconfirmed (Figure 2.1) (Stephen Hull, personal communication 2021). First Nations archaeological sites dating to the Intermediate period have some common characteristics, including: site

location, stone artifacts, and artifact styles, made from quartzite, chert, or quartz, and features such as hearths, or paired hearths. Sites have been identified in the north, the central interior, and the south coast of Labrador in the Strait of Belle Isle. Many of the sites were situated in coastal locations such as sheltered coves and points of land, or, in the interior, near waterways, mouths of rivers, prominent points of land, or areas with sheltered sandy beaches (Brake 2006; Fitzhugh 1972; JWEL & IE 2001; Schwarz 1998; Nagle 1978).

Excavations in interior Labrador for hydroelectric development recovered sites situated on or near portage routes and near the mouth of streams (JWEL & IE 2001). Many of the sites excavated contained cobble combustion features that were roughly one metre in diameter with associated fire cracked cobbles. These combustion features have been described as singular, paired, or blended with a circular or linear shape (Jenkinson and Loring 2012; Neilsen 2013; SSLP 2014a, 2019a). These features have also been interpreted as associated with dwellings, with multiple cobble combustion features paired together being linked with multi-family structures (SSLP 2019a, 2019b). Other material evidence recovered includes stone tools, concentrations of quartzite, quartz, chert, and rhyolite debitage, as well as charcoal and other organic samples, red ochre, and pottery fragments (see Fitzhugh 1972; Innu Environmental Limited Partnership 2002; IED & JWEL 1999; JWEL & IED 2001; Nagle 1978; Neilsen 2006, Schwarz 1998; SSLP 2014a, 2014b, 2016, 2019a). The size of the stone tool and debitage assemblage from the sites ranges from one piece of stone to over 10,000.

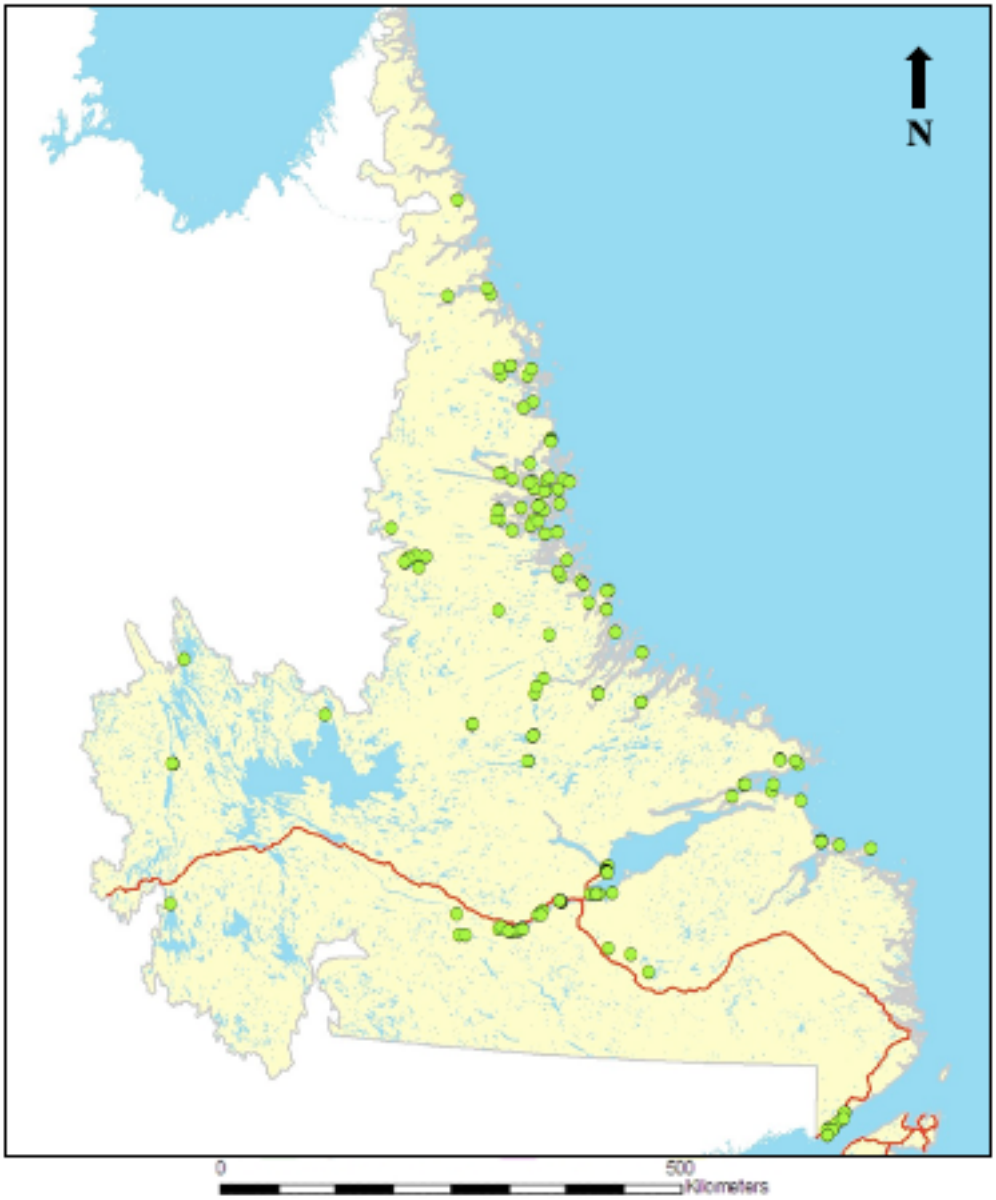



**Figure 2.1 – Known Intermediate Period Sites in Labrador (Courtesy of Stephen Hull)**

*Intermediate Period Classifications*

The Intermediate period classifications were created by Fitzhugh (1972) based on his work in Hamilton Inlet. Researchers posit that North West River was most likely a seasonal occupation area from ca. 3500 to 1400 B.P. Fitzhugh (1972) contends that the

size of the sites suggests smaller, brief occupations for the most part due to migrations of different wildlife populations into the area, as well as the instability of interior resources due to the ever-present climatic fluctuations within this period. On Brinex and Charles complex sites, small hearths are found with, and without, beach cobbles present within them (Nagle 1978). Hearths are combustion features, usually an oval or circular shaped congregation of stones with evidence of burning in the centre and around the outer edges. As faunal remains are rarely preserved, due to the acidic soil of the boreal forest, the subsistence of the groups is based on both the geographic position and ecological potential of the areas.

Fitzhugh created a sequence based upon what he interpreted as six distinct culture groups within the Hamilton Inlet region (Fitzhugh 1972) (Table 2.1). For Southern Labrador, Robert McGhee, James Tuck, and Marcie Madden constructed a roughly 9000-year culture-history sequence of Amerindian occupation based on radiocarbon dates, site elevations, and artifacts (McGhee and Tuck 1975, Madden 1976). While the beginning and end portions of the sequence were understood quite well (Labrador Archaic from ca. 8500-3500 B.P and Maritime Archaic from ca. 5000-3300 B.P), the middle portion of the sequence was not (McGhee and Tuck 1975). In an effort to change this, Marcie Madden (a Master's student at Memorial University of Newfoundland and Labrador) focused her excavations on sites from the middle portion of the sequence. Madden completed work at the Iceberg and Black Rock Brook sites, part of the (early) Late Phase designation of coastal sites, dating from 3500 – 2000 years B.P, and noted their connection to Charles and Brinex complexes of the Hamilton Inlet (Madden 1976).

**Table 2.1: Fitzhugh's 1972 Intermediate Period Culture-History in Hamilton Inlet**

| Cultural Unit Designation | Associated Sites | Terrace Height* | Associated Time Frame | Associated Artifacts | Associated Raw Materials |
|---|---|---|---|---|---|
| *Little Lake Component* | Cookery site; Dining Hall site | 20.7m | 3600 - 3200 B.P | - Stemmed bifaces<br>- Leaf-shaped points<br>- Bifacial knives<br>- Scrapers | - Quartz<br>- Brown and white quartzite<br>- Purple chert |
| *Brinex Complex* | Bunkhouse; Red Ocher; Rigolet Spy; North West Brook | 20.7m to 23.8m | 3200 - 3000 B.P | - Convex based side notched points<br>-Thumbnail scraper<br>- End scrapers<br>- Disk-shaped knives<br>- Lanceolate bifaces | - Chert<br>- Red and white quartzite<br>- Quartz |
| *Charles Complex* | Radio Shack; Piloski Garden; Road Site 1; Louis Montague; Paul Michelin; North West River Brook 2; Hound Pond 4 | 13.1m to 18.3m | 3000 – 2700 B.P | - Lanceolate bifaces with bases that are either waisted, squared<br>- Scrapers<br>- Large oval<br>- Large bifacial knives<br>- Pyramidal cores<br>- Triangular flakes | - Fine grained and opaque cherts<br>- Banded lava |
| *Road Component* | Road Site 2 | 13.1m | 2700 – 2300 B.P | - Side notched and square based flaked points<br>- Thick triangular flakes with a narrow end<br>- Bifacial knives<br>- Flake scrapers<br>- Multitool consisting of a flake knife and scraper | - Ramah Chert<br>- Quartz<br>- Quartzite |
| *David Michelin Complex* | David Michelin Site | 9.1m | 2300 - 1800 B.P | - Large ovate bifacial knives<br>- Wide-stemmed triangular bladed point<br>- Smaller triangular bladed point with a convex blade and pointed stem<br>- Flake scrapers<br>- Knives | - Fine grained chert<br>- Quartzite<br>-Quartz<br>- Ramah Chert |
| *North West River Phase* | Herbert Michelin 1; Henry Blake 2; Sid Blake; Graveyard; Herbert Michelin 2; Ticoralak 6; Winter Cove 1 | 7.6m to 11.3m | 1800 – 1400 B.P | - Lanceolate, ovate bifaces<br>- Bifacical knives<br>- Flake knives<br>- Flake scrapers<br>- Hammerstones | - Local quartzite beach cobbles |

*These heights are from the North West River sites only

These cultural units have continued to be used and reassessed as new information has come to light, and the validity of some of the categories has come under question. It has been pointed out that the Little Lake component was based on a small assemblage

that was similar to late Archaic sites elsewhere, the David Michelin complex was based on a large collection of artifacts collected by D. Charles (the Brinex camp manager in North West River), and the Road component was based on a collection of artifacts from a disturbed context (Fitzhugh 1972). Furthermore, in 1978, Nagle proposed a new complex for coastal Labrador called the Saunders complex (Nagle 1978). Nagle stated that the Saunders complex is similar to the Charles and Brinex complexes of North West River and represents cultural continuity between the two groups (Nagle 1978). Following Nagle, Neilsen (2006) presented a revised Intermediate period culture-history, adopting the term Saunders phase for all complexes and components except the Northwest River phase. In his Master's thesis he states the Saunders complex lasted from 3500 – 2700 B.P and the Northwest River phase lasted from 2600 – 1800 B.P. Like Madden and McGhee and Tuck, Neilsen also argued that there was cultural continuity during the Intermediate period, and not the discontinuity which was first described by Fitzhugh.

Schwarz (SSLP 2019a) has argued that there is a large concentration of North West River phase sites in the Muskrat Falls region that can be considered part of the Labrador variant of the Late Precontact period based on site dates (ca. 2000-1400 years B.P); this time period saw the most intensive occupation. These sites are mainly situated within the Sandy Banks area, Gull Lake, and Muskrat Falls (SSLP 2019a). The ceramics associated with ten of the sites at Muskrat Falls are consistent with those of the Middle Woodland period and have been added to the toolkit of the North West River phase (SSLP 2019a). On the south side of Muskrat Falls, most sites are typologically Intermediate period, both Saunders and Charles complexes, with a date range of 3000-2500 years B.P (SSLP 2019a). However, there were also sites that show a mixture of

Intermediate and Late Precontact artifact styles and raw materials utilized (ex. Saunders chert and quartzite), as well as raw materials from Newfoundland, Western Labrador, and unknown sources (SSLP 2019a). Schwarz hypothesizes that the intermixing of Intermediate and Late Precontact period artifacts occurred because the south side of Muskrat Falls was an important gathering place for peoples inhabiting areas to the north, south, east, and west of the falls.

Fitzhugh and Martin (2021) presented an updated version of Intermediate period culture history, more specifically the Saunders complex that was first proposed for coastal Labrador including information about the Martin North River site (FkBg-35). They state that there is no clear distinction between the Brinex and Charles complexes as the sites are small and close enough to one another, and upon the same terrace, and should be considered the same complex (Fitzhugh and Martin 2021). The Saunders complex consists of dwellings and subsistence patterns similar to those of the Innu in historic times. Fitzhugh and Martin state that there was a point found at Thalia Point-2 near Nain that was similar to a Mansion point that is a Late Archaic point type found in Eastern Massachusetts and the Maritimes. They believe that this point, found on a terrace with both Pre-Dorset and Saunders features that dated to ca. 3500-3100 years B.P, indicates sporadic contact and trade between what is now New England and Labrador. As the Saunders complex and Maritime Archaic cultures overlapped chronologically, Fitzhugh and Martin state that these two cultures tried to avoid one another. The absence of Saunders complex sites on the coast within the Late Intermediate period may have been due to Groswater and Dorset occupation of the Labrador coast. Furthermore, they hypothesize that the Saunders complex people most likely came to Labrador as a new

population that originated from either the St. Lawrence Valley or the Southern Maritimes (Fitzhugh and Martin 2021). There is also evidence for the continuation of the Saunders complex into later periods, cultures, and people within Labrador. Lastly, Fitzhugh and Martin (2021), believe that there is enough information known about the Saunders complex that it can now be updated to the level of a phase.

**2 .2 Environment**

Roughly 10,000 years ago the glacial ice in Labrador was beginning to retreat, with the first evidence of human habitation coming from the south coast of Labrador between 8000 and 9000 years B.P (Fitzhugh 1975; Fulton and Hodgson 1979; McGhee and Tuck 1975). This deglaciation, and then subsequent isostatic rebound, created raised beach terraces within the Hamilton Inlet region (Fitzhugh 1972; Jordan 1975; Josephs and Neilsen 2009). These terraces and beaches now constitute the basis of chronology, along with radiocarbon dates, for North West River and allow for age estimates by observing the elevation of sites above the current sea level (Nagle 1978). Josephs and Neilsen (2009) completed geoarchaeological investigations in Western Hamilton Inlet at Ushpitun 2 (FhCb-04) and Pmiusik$^{u}$ 1 (FhCc-01). These sites were five kilometres from one another but presented with different geomorphological characteristics. Soil and sand from Ushpitun 2 presented as unoriented, larger sized, and poorly sorted, whereas Pmiusik$^{u}$ 1 presented with finer and sorted grains of sand that created a denser soil (Josephs and Neilsen 2009). Ushpitun 2 was actually situated on a small island and was termed a “specialized procurement camp”. Pmiusik$^{u}$ 1 emerged from the water ca. 3750 years B.P and was located around the centre of the proto-Goose Bay peninsula. The study provided further evidence towards the chronological and spatial constraints of the

precontact settlement areas within the Hamilton Inlet. The land surface has risen ca. 135 metres in 7750 years (Josephs and Neilsen 2009). This means older sites are found further away from modern shorelines, whereas younger sites should be closer to the modern-day shore. Hamilton Inlet itself provides a direct link to the sea, passable by watercraft, due to it being the largest, continuous, body of water in Labrador (Fitzhugh 1972).

Hamilton Inlet lies at the junction of three major zones; forest-tundra, lichen woodland, and closed-crown forest (Jordan 1975). Work to better understand the paleoenvironment in Labrador has been undertaken via pollen analysis (Foster 1983; Foster and King 1984; Jordan 1975; Lamb 1980,1985; Short and Nichols 1977). In these studies, sample cores were obtained from east-central Labrador-Ungava, the Eagle Plain on the Mecatina plateau, Paradise Lake, Whitney's Gulch, Eagle Lake, Nain-George River plateau, Alexander Lake, Northwest River pond, Saint John Island pond, Sandy Cove pond, and Aliuk pond. The ratios of singular pollen residue was calculated (Foster 1983; Foster and King 1984; Jordan 1975; Lamb 1980,1985; Short and Nichols 1977). Within the Hamilton Inlet, sedge-shrub and heath-lichen were the first types of vegetation to grow in the soil that was freed from the glacial ice sheets as they retreated (Lamb 1975). Following this initial vegetation growth, alder trees started to grow along the coast approximately 7200 years B.P, with dense thickets within Lake Melville between ca. 6500-6000 years B.P (Lamb 1975). Birch and fir were also growing within Western Lake Melville around 6000 years B.P. The growth of fir trees implies a humid and subarctic type climate (Fitzhugh and Lamb 1985). Lastly, the spruce forest eventually became dominant in Western Lake Melville around 5800 years B.P and ca. 5200-5300 years B.P on the Labrador Coast (Lamb 1975). The transformation to a black spruce forest was

completed by about 4000 years B.P and has remained relatively stable ever since (Fitzhugh and Lamb 1985). The vegetation present in the pollen samples from Hamilton Inlet included: willow, heaths (*Ericacaea* – type), grasses (*Gramineae*), sedges (*Cyperaceae*), wormwood/sage (*Artemisia*), spruce (*Piceae*), fir (*Abies balsamea*), alder (*Alnus*), birch (*Betula*), pine (*Pinus*), clubmoss (*Lycopodium*), ferns (*Dryopteris*), backeapple (*Rubus chamaemorus*), and pinks (*Caryophyllaceae*) (Lamb 1975), all of which remain in the region today (Table 2.2). In terms of temperature, Labrador was in a period of warming from ca. 6000-4000 years ago with the summer temperatures being like those seen today. After 4000 years ago, there were periods of both cooling/wet followed by occasional warmer and colder episodes (Jacobs and Bell 2008).

**Table 2.2 Modern Vegetation (as described by St. Croix 2002)**

| **Trees** | **Shrub Layer** | **Understory** |
|---|---|---|
| Black Spruce, Balsam, Fir, White Birch, Trembling Aspen, Larch, Balsam, Poplar, Willow, Pin Cherry | Mountain Alder, Speckled Alder, Northern Wild Raisin, Dwarf Birch | Labrador Tea, Kalmia, Ferns, Fireweeds, Goldenrod, Mayflower, Solomon's Seal, Corn Lily, Horsetail, Twinflower, Sedges, Creeping Snowberry, Currant, Crackerberry, Blueberry, Partridge Berry, Broom Moss, Feather Moss, Step Moss, Club Moss, Sphagnum Mosses, Reindeer Mosses |

The preservation of faunal remains is extremely poor in the Hamilton Inlet due to the acidic soil typical of boreal forests. As a result, the best estimates of fauna in the Intermediate period in this region is based upon current fauna. The current fauna in the area has been well documented by Fitzhugh and is summarized in Table 2.3.

**Table 2.3 Modern Fauna in Hamilton Inlet**

| Birds and Waterfowl | Large Terrestrial Animals | Small Terrestrial Animals | Marine Life |
|---|---|---|---|
| Multiple duck and geese species, Ptarmigan, Partridge Birds | Woodland caribou, Barren ground caribou, Bear, Wolf | Porcupine, fox, marten, mink, lynx, muskrat, beaver, otter, red squirrel, arctic hare, groundhog, lemming, mouse, frogs, toads | Salmon, trout, cod, ring seal, hooded seal, bearded seal, gray seal, harbour seal |

*Raw Material Sources in Labrador*

As most organic remains are no longer present, the stone tools and the raw materials they are made from constitute the primary source of information in the archaeology of Lake Melville (Table 2.4). The study of raw material sources and distribution is one way in which researchers are able to answer questions regarding movement, territory of a cultural group, social interactions, trade, and zones of influence (Inizan et al. 1999; McCaffrey 2011). It is more than simply finding a source outcrop and tracing the material back. There are multiple levels of evidence one has to analyze in order to understand the relationship a knapper has to the material they are using such as the subsistence strategy, settlement patterns, and mobility patterns (Adams and Macdonald 2015; Andrefsky 1994; Inizan et al. 1999; Jeske 2003; Lengyel 2015).

**Table 2.4. – Raw Material Sources in Labrador**

| Raw Material | Labrador Sources | References |
|---|---|---|
| *Ramah Chert* | Ramah Bay, Northern Labrador (Torngat Mountains) | Curtis et al. 2010; Gramly 1978; Lazenby 1980 ; Leblanc et al. 2010; Loring 2002 ; Stopp 2013 |
| *Mugford Chert* | Kaumajet Mountains, Northern Labrador | Gramly 1978; Nagle 1984 |

| **Raw Material Cont'd** | **Labrador Sources Cont'd** | **References Cont'd** |
|---|---|---|
| *Saunders Chert* | Believed to be in interior Labrador, near Seal and Pocket Knife Lakes | Loring 1989; McCaffrey et al. 1989; Nagle 1978; Neilsen 2006 ; Schwarz et al. 2016 |
| *Fleming Chert* | Astray Lake, Menihek Lake | McCaffrey 1989, Neilsen 2016 |
| *Quartz* | Glacial deposits around Upper Lake Melville | Fitzhugh 1972; Nagle 1984 |
| *Quartzite* | Local beach cobbles from glacial till deposits around Upper Lake Melville, Marshall Falls | Fitzhugh 1972; Nagle 1984 |
| *Slate* | Ramah Bay, within glacial till along the Labrador coast | Fitzhugh 1972; Gramly 1978; McCaffrey et al. 1989; Neilsen 2006; Jenkinson et al. 2014; Whitridge and Woollett 2008 |

### *Ramah Chert*

Ramah chert is arguably the best-known raw material in Labrador due to the importance of the material for many precontact groups, as well as the geographic spread of the material. Due to it being so well known, there are multiple studies of Ramah chert and its source (see Curtis et al. 2010; Gramly 1978; Lazenby 1980; Leblanc et al. 2010; Loring 2002; and Stopp 2013). Ramah chert ranges in colour from black, greenish-black, red, yellow, to translucent grey and white, with multiple colours exhibited on a single specimen (Gramly 1978). The material is both fine-grained and course-grained and excellent for flaking (Nagle 1984).

### *Saunders Chert*

The name Saunders chert is a general heading under which multiple types of stone are categorized, including grey banded lava, fine grained cherts, and felsites (McCaffrey

et al. 1989). The colouring of these raw materials includes purples, pinks, lavenders, green/black, and tan colours (Fitzhugh 1972; McCaffrey et al. 1989; Nagle 1978).

This colourful stone material is found most often within Intermediate period sites in Labrador (McCaffrey et al. 1989; Nagle 1978; Neilsen 2006; Schwarz et al. 2016). The source of Saunders chert has yet to be identified, but it is believed to be within the interior of Labrador, between Northwest River and Davis Inlet (Fitzhugh 1972; McCaffrey et al. 1989; Loring 1989).

### *Fleming Chert*

Fleming chert is a fine-grained stone that ranges in colour from tan, green, grey, and different hues of grey (McCaffrey 1989). This colourful chert has been found in the form of large, glacially rounded boulders in the Astray Lake area (presenting as grey in this specific location) (McCaffrey 1989). Along Menihek Lake is another area where the raw materials have been located (McCaffrey 1989; Neal 2000).

### *Quartz and Quartzite*

Both quartz and quartzite are found in glacial deposits throughout Labrador. Cobbles of these materials can be found along the shores of rivers and lakes in Upper Lake Melville, making them a widely accessible material (Fitzhugh 1972). One of the archaeologically abundant quartzites for Labrador is red quartzite (Jenkinson and Loring 2018; Neilsen 2017). This material can be found in glacial till at site locations such as FjCa-51, and in other contexts in Labrador (Neilsen 2017). At the Marshall Falls site for example (GfCe-3), red quartzite constituted a large percentage of the tools and debitage recovered and was found in large boulders within the hills behind the falls (Jenkinson and

Loring 2018). So far, this raw material has only been found in boulder and cobble form; a bedrock source has yet to be identified (Fitzhugh 1972; Jenkinson and Loring 2018:172).

*Slate*

Tan to grey slate has been found above and below beds of chert in Ramah Bay and are also available within the glacial tills present within the coastal zone of central Labrador (Gramly 1978; McCaffrey et al. 1989; Wolff et al. 2014). Slate has been found at various archaeological sites such as those in North West River, Sheshatshiu, Kamestastin, Iglosiatik island and Ramah Bay (Fitzhugh 1972; Neilsen 2006; Jenkinson et al. 2014; Whitridge and Woollett 2008).

**2.3 FjCa-51**

The Intermediate period site FjCa-51 elevation is varied, with the older components to the north with higher elevations, and the younger components to the south with lower elevations (Area 11 is approximately 19 metres above sea level). FjCa-51 is over 6000 metres squared in size, making it the largest site within the Sheshatshiu and North West River area (BSHS 2019; Neilsen 2010a). FjCa-51 was once situated near sea-level, at the end of a long peninsula protruding into Lake Melville, backed into a low hill behind a shallow cove (BSHS 2004) (Figure 2.2). The site is composed of multiple loci, including the focus of this research - Area 11 (Figure 1.3), that show activities such as quarrying and reduction of quartzite cobbles, stone tool production and repair, as well as the preparation and processing of foods (Neilsen 2011). The artifacts are associated with the Brinex and Charles complexes (ca. 3200 – 2700 years B.P) due to the use of red quartzite, tan quartzite, various coloured cherts, quartz, and rhyolite to produce artifacts, as well as diagnostic Brinex and Charles complex stone tools (BSHS 2019). This also

associates them with the Saunders complex on the North Coast (Nagle 1978; Neilsen 2006), and the sites on the Porcupine Strand, which were recently discussed in the PAO newsletter by Fitzhugh and Martin (2021). A common find within FjCa-51, that has also been documented at Muskrat Falls, are the linear cobble features and double or paired cobble features (SSLP 2019a).

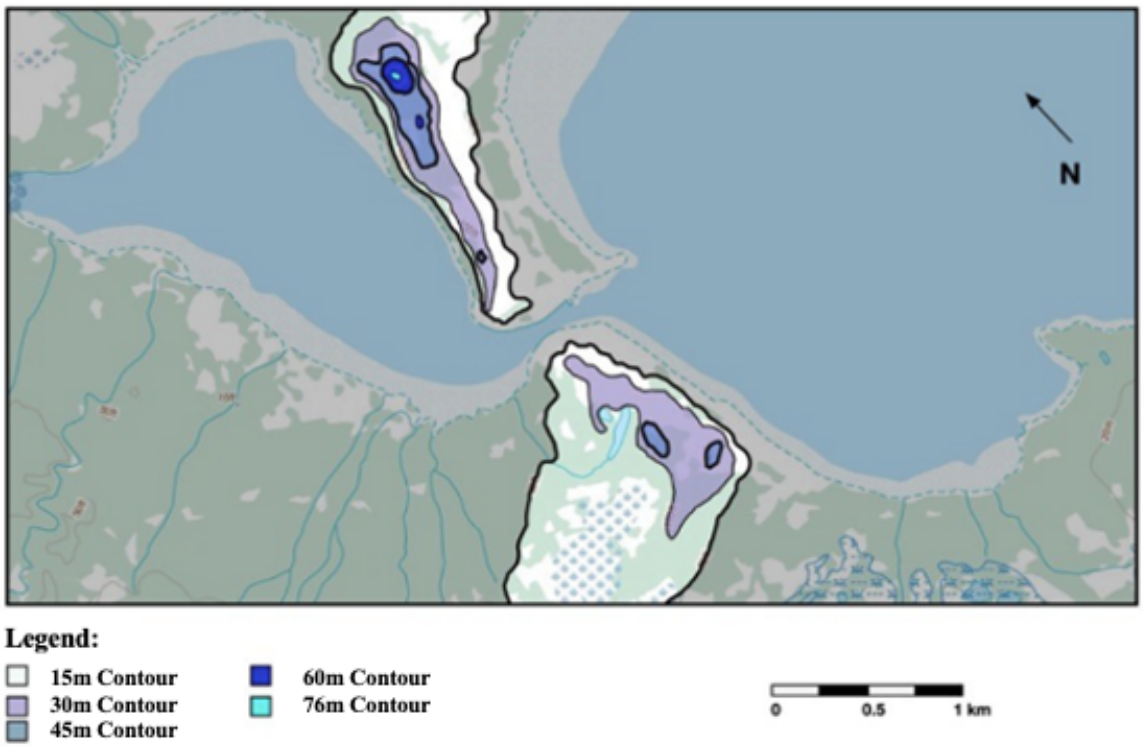



**Figure 2.2 Contour map of the changing shoreline in Sheshatshiu and Northwest River, Labrador (adapted from Neilsen et el. 2018, created by Eileen Bethune)**

FjCa-51, Area 11 is the focus of this research (Figure 1.3). The area measures 45 metres squared, has 1069 artifacts and specimens, and was excavated during the 2010 field season under the direction of Scott Neilsen (Neilsen 2011a, 2011b). Area 11 contains two cobble feature areas (Figure 2.3 and Figure 2.4), one to the northeast and one to the southwest of the excavation area, with a small gap in between. The cobble

features in Area 11 are in the linear paired patterning that has been documented elsewhere in FjCa-51 and other Intermediate period sites. This area contained a less than average amount of debitage (n=987), when compared to other areas in FjCa-51. The exhausted and discarded tools recovered were near the cobble features and were made primarily of fine-grained cherts. There is also a section of the excavation area that contained a harder pea-gravel mix that has not been seen elsewhere at FjCa-51 to date (Neilsen 2011a; Scott Neilsen personal communication 2021). The assemblage consisted of flakes, flake shatter, shatter, anvil stones, bifaces, cores, hammerstones, a pestle, red ochre, scrapers, unifaces, and utilized flakes.


**Figure 2.3 – Feature Area 1 (Photograph courtesy of Scott Neilsen)**

**Figure 2.4 – Feature Area 2 (Photograph courtesy of Scott Neilsen)**

The stratigraphy of the site was consistent throughout all units and was comprised of two levels with three layers in level one. Level one, layer one, contained surface vegetation, sod, and root matter. Layer two contained fibrous dark brown soil, decaying organic material, woody debris, and roots. Layer three contained thin, patchy, light grey soil with a silt like consistency. Layer four, as seen in Figure 2.5, contained a very thin and patchy light grey, leeched sandy gravel. Level two consisted of leeched sand and gravel then glacial till (Figure 2.5). There was a compact pea gravel area within units N32E31, N33E31, N33E32, and N34E31 (Figure 2.6), and this unit also lacked the grey, leeched sand seen in the other units within level two. There was also a charcoal lens present in units N32E31, N32E32, N33E28, N33E33, N34E34, N35E33, N35E34, and

N36E33. It does not appear to be a natural burn event as the lens does not extend over the entire excavation area.

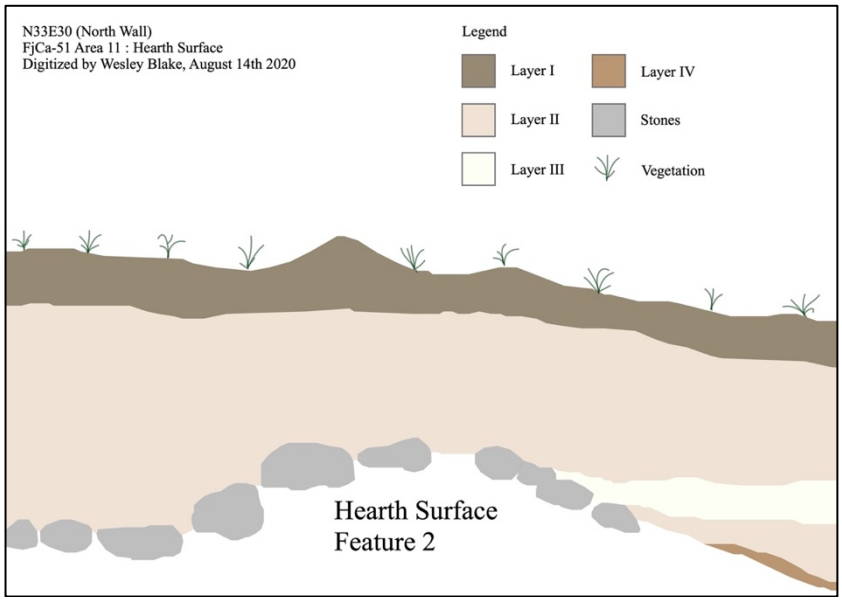



**Figure 2.5 – North wall profile for unit N33E30 with the hearth in Feature Area 2 present (drawn by Wesley Blake)**

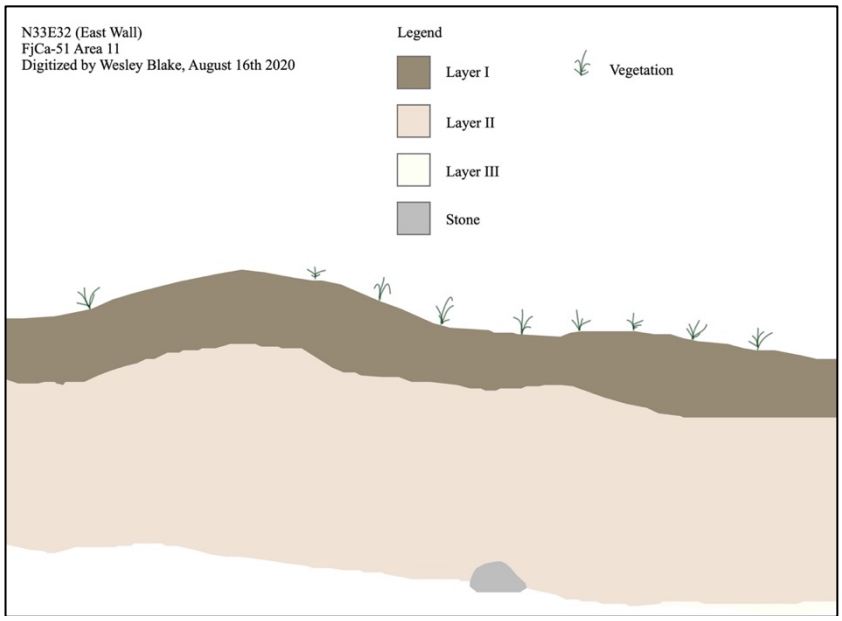



**Figure 2.6 – East wall profile for unit N33E32 (drawn by Wesley Blake)**

## 2.4 Summary

This chapter provided an overview of archaeological research relating to the Intermediate period. The Intermediate period requires additional research as it is not yet well understood, and my research will contribute to this goal. An understanding of the environment during the period comes from pollen analysis, interpretations based on modern weather, isostatic rebound rates, and modern wildlife seasonal patterns. The preservation conditions in the boreal forest mean that organic material rarely survives the acidic soil, and researchers must use stone tools and their debitage to get vital information.

Intermediate Amerindian groups were migrating between both the coast and the interior based upon resources available. This is reflected in the "toolkits", the stone tool artifacts, they created that have become their identifiers within the archaeological record, along with the cobble combustion features. A lot is still unknown about Intermediate Amerindian groups as many of the sites were discovered in disturbed contexts or by collectors and have no context. Therefore, researchers are still debating what the Intermediate period fully entails. Recent research, however, has provided new information and indicates that detailed analysis of past research, combined with the results of new excavations, may lead to further re-assessment and better understanding of this period.

# Chapter 3: Theory and Methods

FjCa-51 is a large and significant First Nation archaeological site located in Sheshatshiu, Newfoundland and Labrador, which dates to the Intermediate period. Within FjCa-51, I analysed the artifact assemblage excavated from Area 11. Area 11 measured 45 metres square and consisted of two cobble features and 1067 specimens (n= 1045 stone artifacts and n= 22 samples). Area 11 was dated via AMS on wood charcoal samples from Feature Area 1, unit N35 E33, and from Feature Area 2, unit N33 E29. The dates obtained from Feature Area 1 are 1680-1519 Cal BC, or 3310 ± 30 years B.P (Beta-371322) in conventional radiocarbon age. Feature Area 2 dates to 1500-1000 Cal BC, or 3160+30 years B.P (Beta-371321) in conventional radiocarbon age. As 97.9% of all specimens within the Area 11 assemblage are stone, they are the primary focus of analysis in this thesis. This chapter will therefore explore the concept of chaîne opératoire and its counterpart, the reduction sequence, to allow the reader to understand how this was applied to the FjCa-51 stone tool assemblage. The discussion includes why stone tool analysis is important, the terminology and methodologies utilized in this research, including cataloguing artifacts, digitalizing of excavation plans, and the residue analysis performed on the five anvil stones.

## 3.1 Chaîne opératoire

The concept of chaîne opératoire, or operational sequences as it translates in English, is widely used within the field of archaeology in Europe and other regions of the world (see Bar-Yosef and Van Peer 2009; Desrosiers and Sørensen 2012; Dionne 2015; Driscoll 2009; Eliassen 2015; Gonzalez 2014; Goreb-Inbar et al. 2008; Higdon 2008;

McPherson-Smith 2015; Sørensen 2012). The chaîne opératoire uses three levels of research in the overall analysis. The tools and objects compose the first and most basic level of analyses. The second level is the series of actions and gestures used to create the artifact and is known more simply as the methods of manufacture. The third level is the technical knowledge shared by the group members creating the artifacts and is the most abstract level of analysis.

One of the first names associated with the concept of chaîne opératoire is André Leroi-Gourhan and his publication entitled *Le Geste et la Parole* from 1964, translated into English in 1994. Leroi-Gourhan argues that operational sequences are the backbone of culture and technology, and that operational sequences are culturally conditioned in such a way that once one uses them from a young age, they become subconscious actions and movements (Leroi-Gourhan 1964). These actions and movements also become what we call the "style" (if discussing art) or artifacts (as is the case for archaeology). He defined chaîne opératoire as:

> "Techniques involve both gestures and tools, sequentially organized by a means of a "syntax" that imparts both fixity and flexibility to the series of operations involved. This operation syntax is suggested by the memory and comes into being as a product of the brain and the physical environment" [Leroi-Gourhan 1964: 114].

Leroi-Gourhan believed that these sequences of operation are created from memory and influences from the physical environment one occupies, based on trial and error, education, as well as societal pressures (Leroi-Gourhan 1964). When discussing stone tool manufacture the aspect of the reduction sequences that continually changed

throughout history was the number of sequences within the manufacturing process. When stylistic and functional variations began to be used within stone tool manufacturing, this consequently created more sequences within the manufacturing process. The overall reduction sequence as a whole remained the same, however, as the creator had to establish which materials they were going to transform, call upon their traditional knowledge, and then manufacture the stone tool (Leroi-Gourhan 1964).

Another name connected with the chaîne opératoire in Europe was Michel Brézillon and his 1968 publication *La dénomination des objets de pierre taillée: Matériaux pour un vocabulaire des préhistoriens de langue français*. In it, Brézillon discusses the chaîne opératoire, with specific reference to Leroi-Gourhan's discussion of the Levallois stone tool tradition. This was one of the few publications discussing the use of chaîne opératoire until the 1980's when the names of Lemonnier and Leroi-Gourhan began to be cited more frequently (Sellet 1993). In the 1980's Pierre Lemonnier revived the concept of chaîne opératoire with his ethnography work on the Anga people of Papua New Guinea (Lemonnier 1986, 1989, 2012). For Lemonnier, the chaîne opératoire allowed him to better understand the conceptual and behavioural aspects of tool manufacturing. To him, one cannot understand tool manufacturing without referring to the technical know-how of the people creating the artifacts. Lemonnier stated there are certain elements when it comes to technology: the object being worked, the organized operational sequences (otherwise known as movements and gestures used in the creation of technology), and knowledge of the sequences (either conscious or unconscious) that are to be used (Lemonnier 1986; Lemonnier 1989).

A critique of this approach is that researchers all come from different social situations which affect our interpretation of artifacts. Therefore, we are not able to fully understand the knowledge of the knappers who created stone tools in the past. Researchers are creating their own interpretations, which can lead to multiple interpretations of the same material. This critique is echoed by Michael Chazan (2020), of the University of Toronto, who argues that the chaîne opératoire is "epistemologically inappropriate" when studying precontact contexts because an emic approach cannot be taken since there are no living informants (Chazan 2020:6).

While chaîne opératoire was becoming increasingly popular in Europe, archaeologists in the United States were also developing similar analytical methods. While the European concept was based on ethnology, as seen with Lemonnier, the American concept was heavily influenced by Michael Schiffer and other processual archaeologists such as J. Jefferson Reid and William L. Rathje during the 1980s (Schiffer 2010). Schiffer created what he called the "behavioural chain", which he described as the creation of a flow model based on the sequence of activities undertaken to create an artifact. The processes analysed in this model occur in stages, and those stages consist of procurement (the process of obtaining the raw stone material sources), manufacture (the creation of the artifact made from the use of various techniques), use maintenance (the resharpening and remodeling of the tools used in order to "refresh" them and make them usable again), and discard (when the tool is fully exhausted and/or thrown away). Each of these stages potentially has multiple processes of its own.

The American reduction sequence, as it was later called, does not analyse the human thought process, including the ideas of concepts and knowledge shared between

people, within the broader analysis; it places greater emphasis on the function of an artifact (Salisbury and Rebay 2017). It is also based on making theoretical statements (Salisbury and Rebay 2017), whereas the French chaîne opératoire is able to provide researchers with an analytical tool one could use to better understand the dynamics of the stone tools (Sellet 1993:107). When using the chaîne opératoire concept, researchers are able to undertake a more detailed analysis regarding the technical activities of the precontact group in question. Furthermore, chaîne opératoire can also address questions and problems regarding curation of the material, as well as the range or efficiency of the technology being created (Sellet 1993). It is also more appealing to archaeologists from different theoretical leanings, as one can take the concept and mould it in their own way.

Over time, chaîne opératoire has diverged into different directions, guided by the needs of individual researchers. This expansion and divergence of chaîne opératoire is a signal that the concept is full of potential and that researchers are still interested in technological research. Having a variety of definitions, while staying true to the original concept, can be seen as a strength with chaîne opératoire. While Leroi-Gourhan's definition of chaîne opératoire is broad, it allows a wide range of researchers to be able to mould the concept in a way that will allow for the most accurate interpretation of whatever is being analysed, be that a stone assemblage or ceramics (Shott 2003).

### *Area 11 Research*

Using the French chaîne opératoire concept, I conducted a detailed analysis of all stone materials excavated from Area 11 in order to understand the assemblage. I recorded the necessary information needed, such as platform scars, flake scars, and amount of cortex present, in order to place the stone artifacts into their manufacturing stages, and

consequently, their place within the chaîne opératoire. I have chosen the French chaîne opératoire based on the information I am able to discern from its use in combination with the other analytical methods. As an example, a simplified chaîne opératoire begins with procurement of raw material from sources, then to formation, use, reuse, and discard (Figure 3.1). As one can see, there is only one direction in which the creation, use, and ultimate discard of the stone tool can go. For the Area 11 assemblage, I did not use the simplified version as it was not suitable for the variety of materials within Area 11. Using the simplified version of the chaîne opératoire would have lost information as it does not show the full potential "life cycle" of materials as they can skip back and forth between stages; the simplified version allows only for a unidirectional lifecycle with no variation. I also applied chaîne opératoire to the analysis of the anvil stones collected from Area 11 (section 2.3) as they too are stone artifacts that were procured and used with a purpose in mind, and therefore have a life cycle of their own.

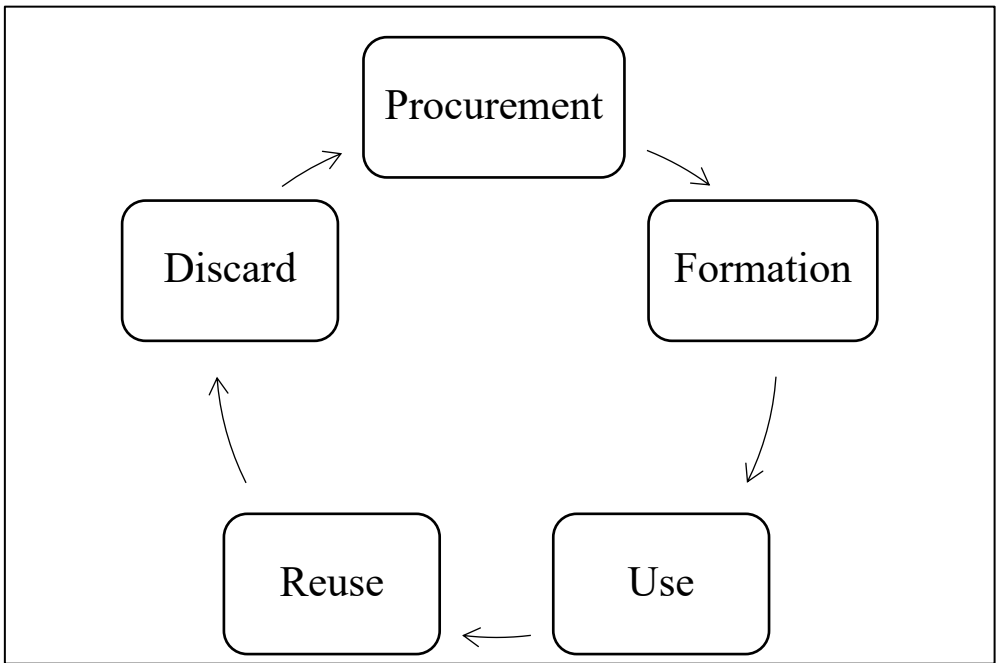



**Figure 3.1 - Simple Chaîne Opératoire**

For Area 11, I applied a more complex version of the chaîne opératoire approach, which accounted for additional variables such as use then discard, or procurement then discard (Figure 3.2). First, for this specific chaîne opératoire we have the stages of procurement, formation (which includes reduction as well as sharpening and resharpening), use, reuse, and discard. Each stage except for procurement has multidirectional black arrows showing that the stone tool can move back and forth between the stages. By using a more detailed and fluid chaîne opératoire, I was able to better place all materials into their respective lifecycles.

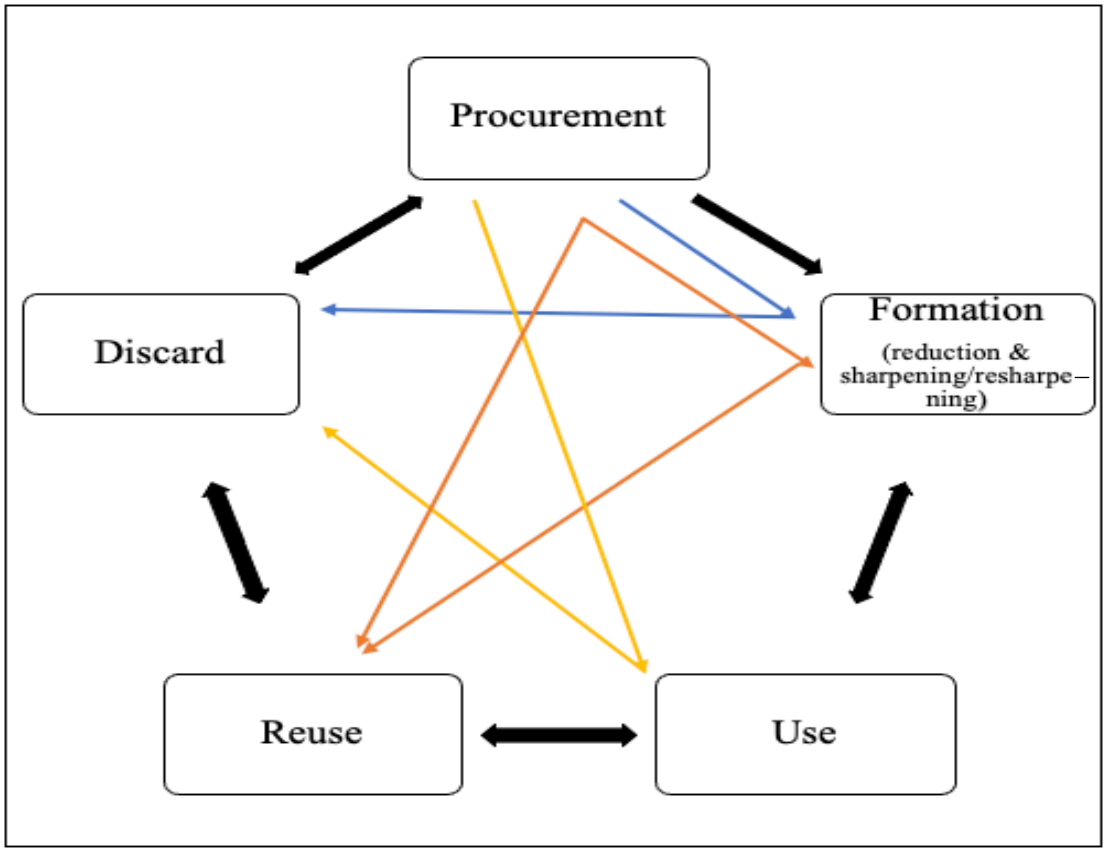



**Figure 3.2 Chaîne opératoire for FjCa-51, Area 11**
Blue arrows - movement of a tool from procurement to formation and then discard without use or reuse. This tool has the potential to be procured and move through the stages again.
Orange arrows - stages of procurement, formation, and reuse as well as straight procurement and reuse.
Yellow arrow - movement of a stone tool from procurement to use and then discard.

### 3.2 Stone Tool Analysis

It is well known that artifacts made from stone are one of the most common forms of archaeological evidence when it comes to past human activity (Kooyman 2000). Stone is heartier than organic substances and artifacts made from it survive even in poor preservation conditions, such as in the boreal forest, while the organic artifacts degrade. As a result, stone artifacts, tools, and debitage, are an expansive source of information for archaeologists about the people who created and used them (Andrefsky 1998; Boisvert and Bennett 2004; Kooyman 2000; Odell 2004; Sievert and Wise 2001; Whittaker and Kaldahl 2001; Williams et al. 2013). The analysis of stone tools goes beyond just looking at a piece of stone and assigning it to a category; every single piece of stone has a story to reveal. These stories start and continue through the time the piece of stone is procured, transported to a site, worked, and discarded (Pecora 2001). Where some people may see only pieces of stone, archaeologists analysing stone tools are able to conceptualize the thought patterns of the person who created the artifact. These thought patterns include the sets of actions that took place for the artifact to be created; procurement of the raw material, which may have included travel to the source and/or trading materials with another group, creation of artifacts, and interaction of humans with their immediate environment (Andrefsky 1994; Kooyman 2000; Odell 2004). Within these categories, there are additional pieces of information one can analyse. For instance, the variety of stone tools that were produced on the site aids researchers in understanding what type of site they are analysing and what activities took place (Cowan 1999; Whittaker and Kaldahl 2001).

For the analysis of Area 11, and most other stone tool analyses, the first step is the identification and classification of all stone artifacts within the assemblage, which lays the groundwork for further analyses. The two basic classifications used are: 1) to recognize and record stone artifacts that are diagnostic markers of a specific culture group, 2) to recognize and record the functionality of the artifacts, how they were used, and how this pertains to the cultural group one is analysing (Andrefsky 1998). As an example, a scraper can be evidence for hide processing, which then allows researchers to create inferences regarding hunting and processing of animal hides and the use of the hides for clothing or as parts of a shelter, among other things. When the classification of artifacts is used as a diagnostic marker for cultural complexes created by archaeological evidence the stone artifact is then considered a trait and can be placed into a temporal or chronological order. For example, William Fitzhugh (1972) suggested that convex-based bifacial knives and side notched points recovered in North West River were diagnostic markers for the Intermediate period Brinex Complex. However, if the classification is being used to record the functional indicators of the artifacts, it is then used to infer and describe the activities that may have taken place at an archaeological site. For example, Fitzhugh (1972:144) notes that the Brinex Complex assemblages have a large variety of functional tool classes that are associated with "domestic functions" such as hide working. Both approaches are seeking to understand what the artifact was used for and how it relates to the rest of the artifact assemblage of the site as a whole. This information informs the researcher about what type of site they are investigating and works within the grand scheme of the chaîne opératoire.

### *Terminology*

To begin to understand stone tool analysis, one must be familiar with the terminology being used. Thankfully, archaeologists around the world tend to use commonly agreed upon terms to lessen confusion between archaeologists from different regions in the world (see Eliasssen 2015; Higdon 2008; Jalbert 2011; Willhite 2016). For this research, terms from both Andrefsky (1998) and Kooyman (2000) were used as they are complementary and similar to the terminology used by the Newfoundland and Labrador Provincial Archaeology Office. The terms used in this research are listed and defined in tables 3.1 through 3.3.

**Table 3.1 – Terminology Related to Flakes** (adapted from Andrefsky 1998 and Kooyman 2000)

| **Term** | **Definition** |
|---|---|
| *Flake* | A piece of stone struck off a core with multiple characteristics including striking platform, bulb of percussion, eraillure scar, bulbar fissure, left and right lateral margins, and lateral fissures. |
| *Striking platform* | An area on the proximal end of a flake that was struck in order for the flake to detach from a core. |
| *Proximal end* | The "top" end where the striking platform is present. |
| *Medial portion* | The middle portion of the flake; may see remnants of flaking scars. |
| *Distal end* | The "bottom" area in which the flake terminated/ broke away from the core. |
| *Ventral surface* | The surface that was created when the flake was struck off the core; usually relatively flat. |
| *Dorsal surface* | The surface of the flake that was originally the outer surface of the core; flake scars present on this surface. |
| *Bulb of percussion* | A bulb-shaped bump which is noticeable just below the striking platform on the ventral surface. |
| *Core* | The larger piece of material from which the flakes were detached. |
| *Debitage* | All of the stone material that was created during the manufacture of tools; some have flake characteristics; shatter (smaller pieces of stone material that broke away during manufacturing that do not have any flake characteristics). |
| *Raw material* | The stones that were used to manufacture tools. |
| *Cortex* | The altered and weathered outer surface of stones. |

**Table 3.2 List of Attributes** (adapted from Andrefsky 1998 and Kooyman 2000)

| Attribute | Definition |
|---|---|
| *Cortex* | The amount of outer surface present on the raw material. 0=no cortex; 1=less than 50% cortex present; 2=less than 100% but more than 50% cortex present; and 3=100% cortex present. |
| *Colour* | The colour of the raw material was recorded based on which colour it best matched in the Munsell Geological Colour chart (Munsell 2004). Colour designations were confirmed by a single researcher in the final analysis to ensure as much consistency as possible. |
| *Raw Material* | The type of stone used to create the artifact. These were recorded as the common archaeological name of the material such as quartzite, quartz, and chert. |
| *Manufacture Technique* | Refers to how the stone artifact was created. There were three categories within this attribute, and they are: unknown, pressure (pressure flaking), and percussion (percussion flaking). |
| *Condition Description* | How stable the material is for handling and future analysis. There were two categories within this attribute. They were good (the material can be handled without much worry of damage) and fair (caution was to be taken as material might be fragile and easily damaged). |
| *Length* | The length of the stone material from the proximal to distal end, measured with calipers in millimetres. The calipers were zeroed out multiple times a day to ensure correct measurements. |
| *Width* | The width of the stone material from one margin to the other, measured with calipers in millimetres. The calipers were zeroed out multiple times a day to ensure correct measurements. |
| *Thickness* | The thickness of the stone material measured with calipers in millimetres. The calipers were zeroed out multiple times a day to ensure correct measurements. |
| *Weight* | How heavy the stone material is, measured with an electronic scale in grams. The one scale used to measure weight was calibrated at least once a day to ensure proper weight measurements. |

**Table 3.3 Typology Classification Definitions** (adapted from Andrefsky 1998)

| Classification | Definition | Photograph (Not to scale) |
|---|---|---|
| *Anvil stone* | A stone used as a platform for processing activities, such as making stone tools or crushing and grinding organic matter. The hard surface reduces the loss of force from pressure or impact. It may show evidence of these processes via pitting and residues on its surface. |  |

| **Classification Cont'd** | **Definition Cont'd** | **Photograph (Not to Scale) Cont'd** |
|---|---|---|
| *Biface* | A stone tool with evidence of reduction (flakes removed) on both of its surfaces. |  |
| *Core* | A large piece of material from which flakes are detached to create stone tools. Cores can also function as other types of tools, then called a core tool, such as a scraper. |  |
| *Flake* | A piece of stone that has been detached from the objective piece, such as a core or a tool, via percussion or pressure. Flakes have defined characteristics such as a striking platform, bulb of percussion, as well as dorsal and ventral surfaces. |  |
| *Flake shatter* | The flakes of stone created during the manufacturing of stone tools that have broken. Can be classified as proximal, medial, and distal. |  |
| *Hammerstone* | A hard piece of stone, such as a cobble, that is used as a hammer in the manufacturing process of tools or in the working of raw materials. May show evidence of use via pitting and staining on its surface. |  |

| **Classification Cont'd** | **Definition Cont'd** | **Photograph (Not to Scale) Cont'd** |
|---|---|---|
| *Microdebitage* | Any piece of stone debitage that is smaller than 1 centimetre in size. Microdebitage tends to signify reduction and resharpening of stone tools. |  |
| *Scraper* | A tool that was designed with the function of scraping in mind. They typically have one working edge present and are distinguished by flaking and thinning of the area. May show evidence of use via chipping and staining of working end. |  |
| *Shatter* | Shatter is stone material that unintentionally detaches from the core when a flake is purposely being detached. It tends to be chunky and angular in shape. |  |
| *Uniface/unifacially worked tool* | A tool where the flaking has been relegated to one of the major surfaces (dorsal or ventral) of the tool. |  |
| *Utilized flake* | A flake that has been used by humans with minimal modifications, such as sharpening, prior to use. |  |

**Definitions based upon those discussed by Andrefsky 1998 and Kooyman 2000.*
*** All artifacts pictured are from Area 11.*

The way the stone artifacts are manufactured provides valuable information regarding the techniques used by the people who created them. For Area 11, the

manufacturing technique used was flaking. Flaking is the process whereby chips of stone are removed from the core being turned into a tool. Each flake removed produces a negative flake scar on the specimen, which can then be tallied and allows for inferences regarding stage of production. For Area 11, there were two flaking techniques being used: percussion and pressure, with some artifacts showing evidence of combined percussion and pressure flaking. Percussion is the technique where flaked pieces of material are detached from the core by direct contact with a hammer (usually another larger stone). Pressure flaking is the technique whereby a pointed flaker (a piece of bone, antler, or wood) is placed on the edge of the stone being worked while also applying continual pressure until a flake detaches.

### *Raw Material*

There are three classes of rocks: metamorphic, igneous, and sedimentary, and they are classified by their composition and texture. Many choices were involved in the collection of raw materials for making stone tools: from locally available materials, materials that were from distant sources that one had to travel to, and then in certain circumstances, materials that were traded between different cultural groups or regions. Local stone materials are those with geologic sources near a habitation site, from which stones are able to be gathered easily, be that cobbles eroded from glacial till and other soils, or from exposed outcrops of bedrock. These local sources may have been preferential, regardless of quality, as they are acquired easily; one did not have to expend much energy in order to exploit the resource (Andrefsky 1998; Caruana et al. 2019; Kooyman 2000; Wilson 2007a). This is reflected in the archaeological record, as local raw materials show less evidence of conservation and tend to be more abundant both as

tools and debitage, than those from further afield (Kooyman 2000). Exotic materials are those that are sourced from geologic sources which are further away and require a heavier energy expenditure (Wilson 2007a; Wilson 2007b). Exotic raw material can manifest in the archaeological record as complete and exhausted tools with associated debitage. Researchers would not expect to find much evidence of the early stages of working of exotic raw material as the reduction of a core likely happened closer to the source in anticipation of transporting the material to a habitation area (Henry and Mraz 2020; Newman 1994; Kooyman 2000).

Another consideration in the selection of raw materials is their knapping quality, and what the stone tool maker determined to be the appropriate raw material for the tool they were trying to create. Knapping quality refers to how well raw stone material can be worked into a final form; fracture patterns, the hardness of the stone, and imperfections all contribute to this. In order to identify "good or bad" raw materials, the maker had to assess elasticity, homogeneity, and fragility of the material (Inizan et al. 1999). Kooyman (2000) argues sedimentary rocks that have been altered to be metamorphic rocks are the most important archaeologically. This is due to the fact that the metamorphosis makes the rock harder, or adds silica, while also making the material more flakeable; the measure of flakeability being how easy the material is able to fracture and create flakes, which is particularly important. The raw materials identified within the Area 11 assemblage are: quartz, quartzite, chert, and slate. Visual analysis was used for the raw material identification with the aid of a magnifying hand lens when necessary.

### 3.3 Methods

The excavation of Area 11 at FjCa-51 was undertaken during August and September of 2010. The field crew included Dr. Scott Neilsen and four residents of Sheshatshiu who had previous excavation experience - Jodie Ashini, Ann-Marie Andrew, Angela Cole, and Anthony Jenkinson. The location was excavated using a one-meter grid, where the recovered artifacts were measured in three dimensions using a tape measure and local datum (Northing, Easting, and depth below datum). All soil was screened through quarter inch mesh, and all artifacts found in the screen were catalogued according to excavation unit and quadrant. All the excavation data was recorded on unit excavation records and catalogue forms, including hand drawn soil profiles and the excavation plan for the unit.

The assemblage from Area 11 of FjCa-51 was recorded in the field and had been stored at the Labrador Institute's Laboratory for Applied Archaeological Research and Community Heritage (LARCH) with limited previous analysis. The cataloguing process was divided into two tasks – analysis of the artifacts and data entry. The analysis consisted of Jay Andrew and I taking one unit bag each and analysing the artifacts to record their characteristics on Newfoundland and Labrador Archaeological Specimen Record forms. Once each unit bag was catalogued, I took all artifacts and record forms and input the data into the PAO digital Excel database template.

Each artifact was cleaned with a soft toothbrush. The artifacts were then examined with the naked eye and with the aid of a handheld magnifying glass, to better see any defining characteristics such as striking platforms, flake scars, or usewear, with all information being documented. Once this was completed, the artifact's length, width, and

thickness were measured with digital calipers that were calibrated each day before use. Weight was taken via electronic scales that were calibrated at least once a day. The colour of each artifact was determined by matching the colour with one from the Munsell Geological Chart (Munsell 2004). Artifacts of similar colour were then grouped together for analysis purposes, such as red quartzite, grey quartzite, and yellow quartzite. The type of artifact was documented along with the related culture and cultural phase/complex as well as any dates associated with these based upon current collections and known diagnostic artifacts. Any other comments were recorded in the comments section. Once the analysis was complete, each artifact was placed back into its own correctly labelled catalogue bag and then paperclipped to the catalogue sheet in preparation for entering the data into the digital catalogue.

For quad bag artifacts, the cataloguing process took a divisive approach where the grouped materials were separated into smaller subgroupings. As all materials found within one quad were placed into one bag together, the artifacts were first separated based on material type. Each material type created its own subgroup. These subgroups were further divided by artifact type (flake, flake shatter, shatter), and then divided again based on colour. So, in the end, all artifacts were grouped based on material, artifact type, and then colour. The only measurement recorded for these groups was amount and weight, and it was a combined weight of all artifacts in the subgroup. This information for each quadrant of a unit is quite useful to the overall interpretation of site activities. Once a full unit was catalogued on paper, it was entered into the PAO digital database. I inspected each individual artifact, or group of artifacts in the case of quad bags, at this time to confirm the data recorded on the catalogue sheet, and corrections were made when

necessary. An arbitrary starting number of 6000 was chosen for FjCa-51 in order to avoid confusion or overlap with catalogue numbers for Areas 1 through 10. Each artifact bag was then numbered, as was the catalogue sheet.

### *Classifications Schemes*

Classification is an important part of archaeological methodology. Classification systems are used so that the variability in the material being analyzed can be placed into manageable groups, which are then used for comparison and to generate questions and answers regarding the gathered data. Types, also called classes, are groups of similar specimens that are found within the assemblage of material being analyzed. The systematic arrangement of types within the population being analysed is then called a typology (Andrefsky 1998). Similarly, the systematic arrangement of classes within the population being analysed is called a classification scheme. The end goal of a classification scheme is to produce types that are similar within the group and have a great amount of variability and differences with other group types. The number of types a researcher defines within a population is dependent upon the classification scheme and what criteria they ultimately use in order to create the types (Andrefsky 1998). These classifications are also arbitrarily created based upon the knowledge of the researcher, so one must ensure the classifications are able to be replicated by others.

For my research, I used two interlinked classifications: attributes and typologies. Attributes are sets of characteristics used to aid in the classification of stone materials. Examples of attributes include, colour, raw material type, weight, length, and presence or absence of cortex. Whereas a typology can be described as a group of similar pieces of stone material (Andrefsky 1998). Therefore, a typological approach creates groups based

on the presence of one or more distinct morphological characteristics (types) (Andrefsky 1998). When it comes to studying the archaeological history of First Nations peoples in Labrador, using an analysis based on morphology is important. As a non-Indigenous researcher, I am not equipped with the specialized knowledge which would allow me to fully discuss the function of stone artifacts. While I understand stating that an artifact is a scraper assigns a function to it, I do not take further action to fully discuss how the scraper was utilized as this could lead to misinterpretation. An example from Area 11 would be the different types of bifaces found. These bifaces, upon first examination, looked like projectile points, but upon further analysis one of the bifaces was determined to have been used as a knife rather than as a projectile.

The attributes chosen for this analysis were based upon the information I needed from the artifacts. All the attributes can be placed into four scales, or categories: nominal, ordinal, interval, and ratio (Andrefsky 1998). For nominal scales, the attributes are mutually exclusive and are usually coded as a yes or no, presence or absence, or a +/- answer which I used in the fields of complete or incomplete and associated feature. For the ordinal scale, all the attributes are ranked in order relative to one another based on a continuum such as the amount of cortex present (0= none, 1= ≤50%, 2= >50%, or 3= 100%). In the interval scale, the attributes have all the characteristics seen within the ordinal scale, but also have certain characteristics that have equal distance between each state. They do not, however, have an arbitrary starting point or zero. Within the ratio scale, the attributes have all the properties of the interval scale, but they also have a fixed zero point. Some examples of ratio scale attributes analysed in this research include length, width, thickness, and weight. Most of the attributes for this research (Table 2.3)

were analysed based upon the Provincial Archaeology Office of Newfoundland and Labrador's (PAO) Specimen Record Form (SRF), available from their website.

Within typological analyses there are multiple ways in which information can be grouped. I have used monothetic, polythetic, and dissection approaches. A monothetic approach creates typologies based upon a single attribute such as colour, whereas a polythetic approach creates typologies based upon multiple attributes at the same time (Figure 3.3). With a dissection approach, the stone artifact assemblage is divided into classes based upon an artificial deviation chosen by the researcher. An example of this would be classifying each piece of stone material into categories based upon weight intervals. Table 3.4 is an example of the use of the dissection approach, and the utilized flakes are dissected based on weight.

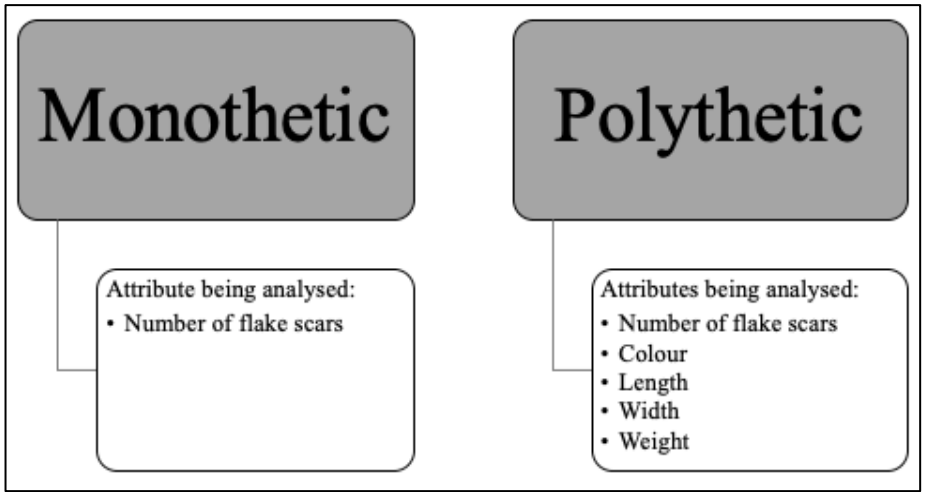



**Figure 3.3 Monothetic vs. Polythetic approach**

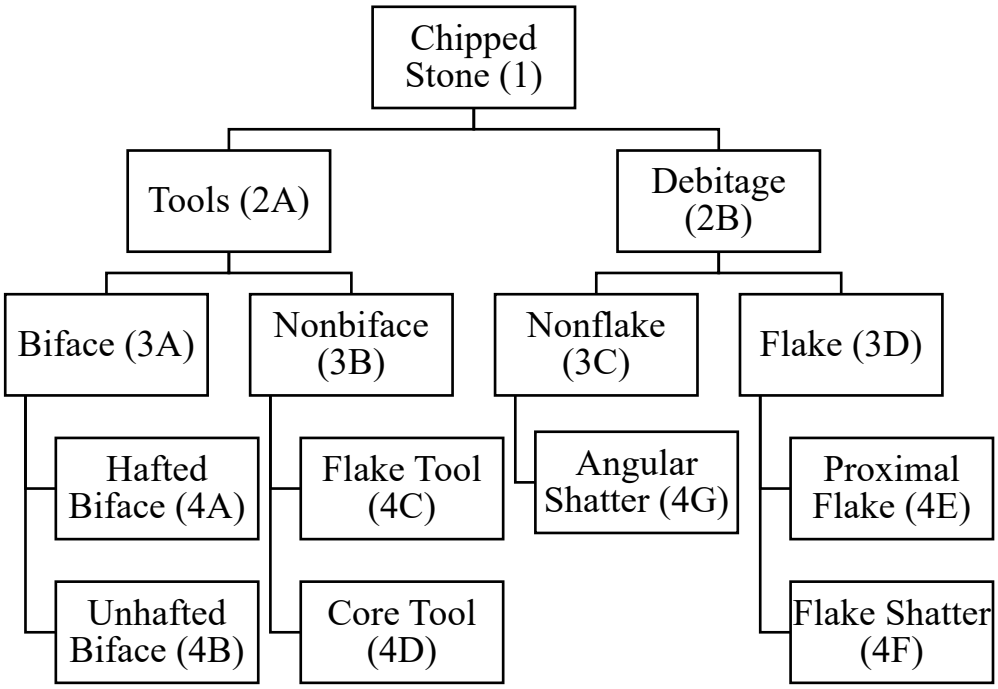
**Table 3.4 – Dissection versus Modal Approaches to Utilized Flake Weights**

| Catalogue Number | Weight (g) | Dissection Type |
|---|---|---|
| 6016 | 0.2 | D1 (0-5 g) |
| 6005 | 0.7 | D1 |
| 6004 | 1.1 | D1 |
| 6414 | 1.2 | D1 |
| 6079A | 1.3 | D1 |

| Catalogue Number Cont'd | Weight (g) Cont'd | Dissection Type Cont'd |
|---|---|---|
| 6166 | 1.9 | D1 |
| 6371 | 2.1 | D1 |
| 6026 | 2.6 | D1 |
| 6003 | 3.4 | D1 |
| 6171 | 4.3 | D1 |
| 6323 | 4.6 | D1 |
| 6312 | 4.7 | D1 |
| 6120 | 6.3 | D2 (6-10 g) |
| 6027 | 9.4 | D2 |
| 6129 | 9.8 | D2 |
| 6175B | 14.2 | D3 (11-30 g) |
| 6244 | 28.1 | D3 |
| 6399 | 41 | D4 (31-50 g) |
| 6433 | 43.2 | D4 |
| 6429 | 119.5 | D5 (51+ g) |

As other researchers have done in Newfoundland and Labrador (Hartery 2001), I chose to use Andrefsky's (1998) generalized morphological typology for the typological classification, as it was purposely created to be broad enough to include chipped stone artifacts from around the world, while also being specific enough to create unambiguous types. This typology also includes both tools and debitage, which is crucial for the FjCa-51 Area 11 analysis as the assemblage is 94% debitage. This classification also works well with the PAO classifications that are to be followed by all archaeologists in Newfoundland and Labrador. Figure 3.4 shows the generalized morphological typology for chipped stone material that has been adapted from Andrefsky (1998). As seen in Figure 3.4, the tool classification includes biface and non-biface, and these are further subdivided into hafted and unhafted bifaces as well as flake tools and core tools. A hafted biface shows evidence of having been attached to a handle, including prepared notches, thinning of the base, and other evidence such as crushing of the lateral margins. An

unhafted biface is a stone tool that does not have any evidence of hafting, and therefore may not have been attached to a handle. A flake tool, also categorized as an expedient tool, is a flake that has been modified by humans in visible ways such as use, chipping, and retouch, usually on the lateral margins. Artifacts classified as core tools contain visible modification such as usewear or sharpening, and do not have characteristics that place them within the biface or flake tool categories.




(1) Human modification → Yes- tool, No- debitage
(2A) Bifacial flaking → Yes- biface, No- nonbiface
(2B) On flake → Yes- flake debitage, No- nonflake debitage
(3A) Contains haft element → Yes- hafted biface, No- unhafted biface
(3B) On flake → Yes- flake tool, No- core tool
(3C) Contains platform → Yes- proximal flake, No- flake shatter
**Figure 3.4 – Modified chipped stone tool typology**

The debitage category includes flake and non-flake (Figure 3.4). The flake classification is subdivided into proximal flake and flake shatter. A proximal flake is any debitage specimen with a discernible striking platform, while flake shatter is recognizable

as a flake, but does not include a complete striking platform. In the non-flake category, there is shatter. Shatter has no discernable flake characteristics such as a clear striking platform and often has more than two primary surfaces.

Within stone tool analysis, there is a division between typological studies and technological studies. Typological studies, according to Driscoll (2009) usually have the end goal of creating results in the form of artifact types. Whereas technological studies concern the entire assemblage, both tools and debitage, in order to understand the stages of manufacture. This division is not seen within the analysis undertaken with the Area 11 assemblage as both the tools, including their typologies, and debitage are analysed. I am using both studies in association with one another to collect as much information as possible. Driscoll (2009) also makes a good observation in that by defining morphological characteristics, one is unable to consider that certain morphologies can be the result of resharpening or reuse and may have fit into a different category before the modifications; morphology only shows the end product of the phase of tool creation. As well, the manufacturing process between two similar stone artifacts may have been completely different and we are unable to examine this.

### *Digital Visualization of Area 11 Excavation*

The creation of excavation maps is not new to the field of archaeology. Early in the history of archaeology, one of the field methods was to draw the excavation so that a written record was created before the excavation destroyed the site (Trigger 1989). As Morgan and Wright (2018) also state, the drawing created within the field becomes the embodiment of the site once it has been excavated, an irreversible and destructive method. The communication of our interpretations by visual means is a way in which we

are able to bring the site, and our arguments, to life (Morgan and Wright 2018). As well, researchers who were not a part of the excavations can look back at the drawn excavation maps and come to their own conclusions regarding the site. Digital excavation drawings can be produced multiple ways including in the field with iPads, digitally tracing over top-down photographs of the excavation, or by digitizing paper excavation drawings and digitally tracing over them, as was the case for this research (Alperson-Afil 2019; Bowden 1999; Quartermaine et al. 2014). Using various programs such as CAD or Graphic, one can create multiple layers of a map that each hold different forms of information, such a stone tool material type, different stratigraphic levels, or different tool types (Bowden 1999). One does have to understand that the varying styles, skill of the person creating the drawing, and understanding of archaeological excavation drawings all come into play (Morgan and Wright 2018). Excavation maps are a simplified and distorted image of what the illustrator is viewing at the time of creation; they are trying to draw a three-dimensional excavation unit in two dimensions (Banning 2000:288). Details can also be omitted or added based on how the illustrator interprets what they are seeing. Scale can also be manipulated during the creation of the illustrations to create an exaggerated view. These variables must be in the minds of the people viewing the drawings as they can skew the view of the excavation. Even though these are issues worth considering, the standardization of excavation methods, including data recording, has allowed for a more efficient and better data collection which aids in creating the digital excavation drawings, while also preserving the data in a way that people are able to revisit in the future (Caraher 2015).

To fully visualize the spread of all materials within Area 11 of FjCa-51, the field drawing of each unit was scanned into a computer and then placed into Graphic, a computer program for Mac OS users. A grid was created in Graphic to mimic the excavation map in the field then the unit drawings were placed into the corresponding grid units and traced. This allowed for the visualization and management of the information recorded on the unit field drawings. Each artifact classification was placed into their own layer within the map, which could then be turned "on" or "off" based on what information needed to be examined. Furthermore, each piece of provenienced stone material analysed within the excel sheet was also placed into the digital map. The information was also placed into QGIS as another means of visualization. By using QGIS, I more accurately mapped the artifacts based on their Northing, Easting, and depth below datum. This allowed me to better visualize association between artifacts and features across the excavation area, despite not being part of the excavation team.

### *Residue Analysis*

The residue analysis was conducted in two different locations. First the residue was extracted and concentrated in the Archaeological Services laboratory in Fredericton, New Brunswick before it was sent to the PaleoResearch Institute in Boulder, Colorado for the refinement and analysis of the residue obtained. Each of the five anvil stones went through the same process that was outlined by the Archaeological Services laboratory to avoid contamination and produce the best possible residue extraction results. To begin, wearing clean gloves, plastic Ziploc bags were placed into a large plastic bowl to prevent the anvil stones from scratching the bowls and leaving residue within the scratch. Next, each anvil stone was rinsed with tap water while also being lightly brushed with a new

manual toothbrush. After 5 minutes, the anvil stone was transferred to a second plastic bowl with Ziploc bags lining the inside. Tris solution was then pipetted onto the anvil stone, which was then brushed with an electronic sonicating toothbrush. Once finished, the anvil was placed out to dry and the tap water from the first bowl was collected into containers and labelled. The contents of the second bowl, which contained the tris solution and residue, were collected in other containers and labelled. The containers with both the tap water rinse and tris solution rinse were then left overnight to allow the residue to settle to the bottom of the containers. Once settled, using clean gloves, the tap water rinse containers had the excess water pipetted out and discarded. Whereas the contents of the tris solution containers were pipetted out into 16mm tubes with appropriate labels. Each tube was then allowed to settle, and all excess tris solution was pipetted out and placed into another container for appropriate disposal. Next, any remaining tris solution from each tube was pipetted into a 1.5ml tube and labelled. These 1.5ml tubes were then briefly placed into a vortex mixer before being placed into the centrifuge for 3 minutes. Once all 1.5ml tubes from each anvil were through the centrifuge, I then pipetted all the concentrate into the larger 16mm test tubes. Each anvil stone produced three 16ml test tubes with concentrate present. All fifteen tubes were then placed into the freezer until they could be sent to the PaleoResearch Institute.

As reported by the PaleoResearch Institute (Scott-Cummings 2020), once the samples arrived, they were placed into a beaker where sodium hypochlorite (bleach) was added and left overnight in order to destroy specific organic matter without destroying the starch present, with the samples being rinsed multiple times the next day. Once this was accomplished, a dilute portion of potassium hydroxide was placed into the samples for

two minutes, after the two minutes, the beakers were filled with water and allowed to sit for two hours. This process was to remove even more organic material that is not needed for analysis. The samples were then sieved through 250-micron mesh and left overnight. The next day, the samples were then rinsed with hexametaphosphate and water in order to remove the clay present, and then rinsed multiple times with water. Once the samples were washed with the water, they were placed into a centrifuge and then were dried. The next step was to separate the phytoliths out of the silt mixture left after the drying. This was done by mixing the samples with sodium polytungstate and centrifuging. After this, the samples were rinsed and centrifuged again multiple times at a rate of 3000 rpm for 10 second bursts until there was no more clay in the mixture. These samples were then freeze dried and mixed again with sodium polytungstate and centrifuged. The phytolith and starch material was then taken and rinsed in alcohol to remove any water remaining. These samples were then placed on microscope slides and viewed under a light microscope at magnifications of 500x.

Residue analysis was undertaken to discern if the anvil stones were used by the occupants of the site for processing of organic material. Residue analysis is not often undertaken on anvil stones in the region and the stones were not initially collected with this goal in mind. For the residue analysis, the laboratory usually requires a sample of soil from beneath the lithic material being analysed. This acts as a control as one may get false positives from other sources within the soil such as bacteria, animal faeces, lipoproteins, and alkaline substances in the soil (PaleoResearch Institute 2020). By having the control sample, one can potentially eliminate certain results as contamination or as products of the soil. At Area 11 there was no control sample collected with the five anvil

stones as residue analysis was not considered at the time of collection. Also, the stones were not collected using rubber gloves and there is some potential for contamination as a result. When the residue is compared against the known serum database, positive results will be based on the broad family level of the animal. Therefore, the samples will only show that the residue collected came from, for example, the Cervidae family.

While this is considered an issue with the sampling of residue analysis in general, for the purposes of this research it is not a significant problem as the goal was to determine if there is evidence for the stones in Area 11 having been used as working platforms, and not to distinguish each individual organic material that was being worked. In addition to helping determine possible activities undertaken, this information will also encourage future researchers within the area to collect and catalogue anvil stones instead of disregarding them as has been the case in the past. The results can also inform the development of controlled collection procedures for artifacts in the field, which then allows for more information to be collected and reported, other than just the lithic assemblage and the features.

### 3.4 Summary

This chapter summarized the theoretical concept, terminology, and methods utilized in this research. Without this information, one is not able to fully understand the stone tool analysis undertaken or the results that are presented in the following chapters. Understanding the variability within each stage of stone tool production and analysis is key in creating and using methods that are best suited to the material. Chapter Four combines both the theory and methods discussed within this chapter to provide results from the analysis of the assemblage in Area 11 of FjCa-51.

# Chapter 4: Results

As outlined in Chapter Two, Area 11 is part of the larger archaeological site FjCa-51 within Sheshatshiu and is radiocarbon dated to the Intermediate period within Labrador. FjCa-51 is over 6000 metres square, with Area 11 covering 45 square metres (Neilsen 2011) (Figure 2.2). The main source of archaeological information from the site is in the form of stone tools and debitage.

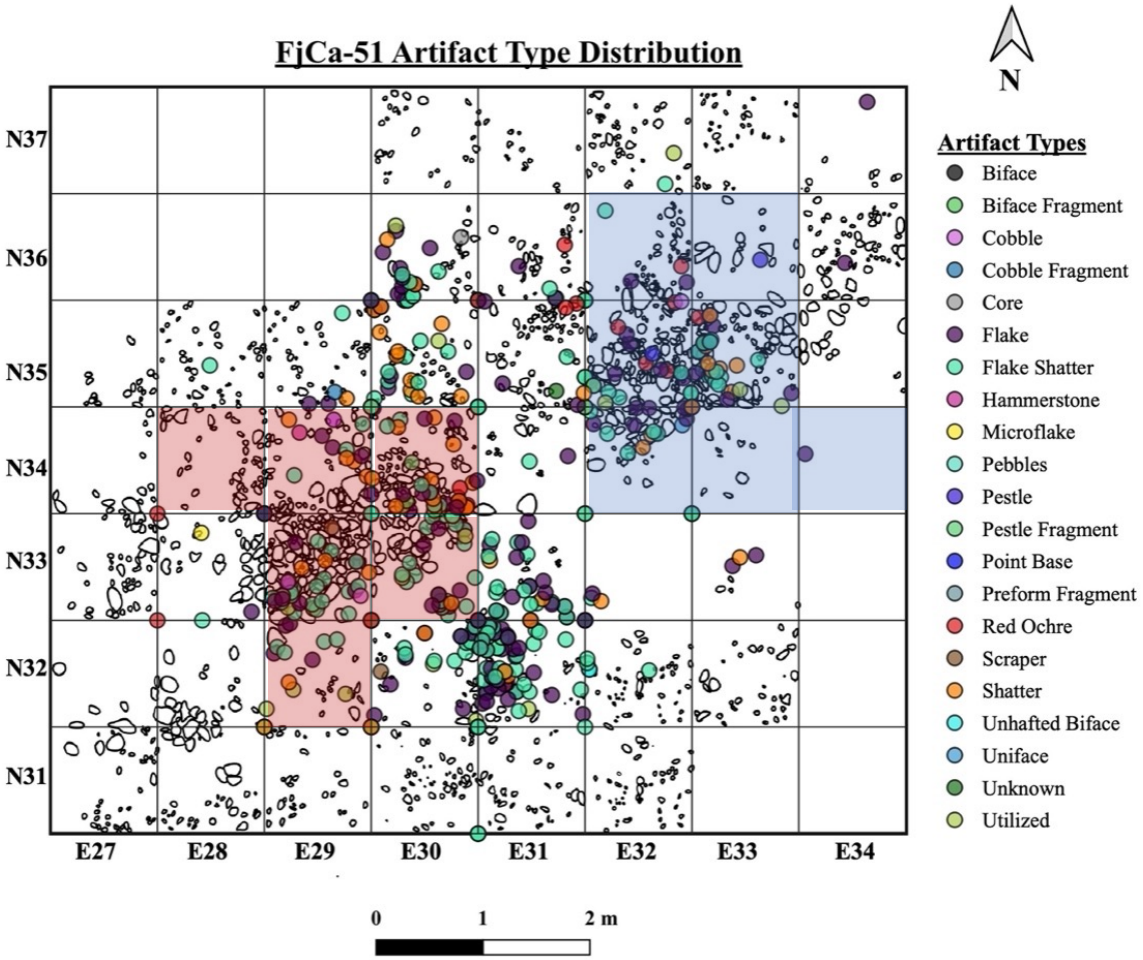



**Figure 4.1 - Area 11 artifact distribution with Feature Area 1 in blue and Feature Area 2 in red.**

For Area 11, there is a total of 1069 specimens, including artifacts (n=1046) and samples (n= 23). Feature Area 1 is located in the northeastern portion of the excavation area and consists of units N34E32, N34E33, N34E34, N35E32, N35E33, N36E32, and N36E33. These seven units within the feature area contained a total of 152 artifacts and samples (tools n=10; debitage n=135; samples n=7) (Figure 4.1). Feature Area 1 is the smaller of the two features present in Area 11. Feature Area 2 is located in the southwestern portion of the excavation area and consisted of units N32E29, N33E29, N33E30, N34E28, N34E29, and N34E30. These six units within the feature contained a total of 386 artifacts and samples (tools n=26; debitage n=354; samples n=6) (Figure 4.1).

This chapter presents the results of all analyses completed on the archaeological data recovered from FjCa-51, Area 11. There are five sections within this chapter: the complete assemblage analysis, tool analysis, debitage analysis, residue analysis, and sample analysis. Within each section the topics are broken down into categories and presented in tables, with a short discussion. For the complete assemblage the categories of collection method, weight, material type and colour, manufacturing and artifact distribution within the site are analysed. The results of tool analysis (which focuses on weight, type of tool, and raw material utilized) will be discussed before moving on to the debitage section. The debitage section focuses on weight, type (flakes, flake shatter, and shatter), condition (complete versus incomplete flakes), raw material, and cortex scores. After the debitage section, a section on the residue analysis (both phytoliths and protein analyses) is presented, as well as a section on the samples (decayed wood, charcoal, red ochre, and unknown samples). The chapter then ends with a discussion on all analyses and how they aid in better understanding FjCa-51, Area 11.

## 4.1 Area 11 Artifact Assemblage

There is a total of 1046 stone artifacts from Area 11, classified under 20 separate categories (Figure 4.2). Most of the artifacts recovered were debitage in the form of flakes, flake shatter, and shatter (n=979). Of the 52 tools recovered, 26 were informal tools and 26 were formal tools.

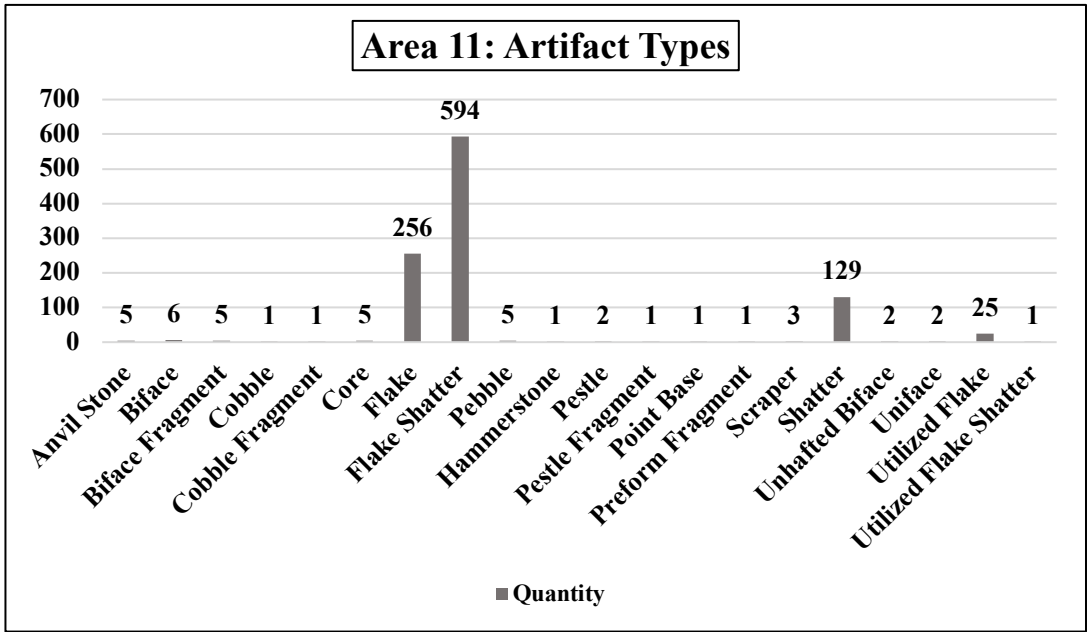



**Figure 4.2 – Area 11 artifact types**

*Artifact Collection Method*

There were three main artifact collection methods employed in the field. These included excavation (collected in the field with 3-dimensional provenience), quad bag (artifacts such as small debitage and screen items that were collected in each quadrant of the unit in a disturbed context), and screen (artifacts that were uncovered when screening soil with an unknown quadrant). Table 4.1 displays Area 11 excavation results by categories of lithic material and collection method, and Tables 4.2 and 4.3 display these same results for Feature Areas 1 and 2 specifically. Table 4.2 shows that 50.4% of the

Area 11 artifacts were collected within quad bags. This includes the specimen unit and quadrant, but not the exact provenience within this space. With this information one can reach conclusions based on assumed associations. The remaining 48.9% of artifacts have specific 3-dimensional provenience and conclusions can be made based on known associations. Table 4.2 shows that Feature Area 1 artifacts were mostly collected by excavation, whereas Table 4.3 shows that Feature Area 2 artifacts were mostly collected via quad bags. Therefore, Feature Area 1 has more precise excavation information for the artifacts allowing for stronger conclusions on area use. This also indicates that the artifacts associated with Feature Area 2 are smaller and may coincide with the activities undertaken within each Feature Area, which will be discussed within section 4.3.

**Table 4.1 - Area 11: Artifact Collection Methods**

| **Material** | **Excavation** | **Quad Bag** | **Screen** | **Unknown** | **TOTAL** |
|---|---|---|---|---|---|
| Chert | *30* | *189* | *0* | 0 | **219** |
| Mica | *0* | *1* | *0* | 0 | **1** |
| Quartz* | *26* | *11* | *0* | 1 | **38** |
| Quartzite | *433* | *320* | *7* | 0 | **760** |
| Slate | *12* | *0* | *0* | 0 | **12** |
| Unidentified | *10* | *6* | *0* | 0 | **16** |
| **TOTAL** | **511** (48.9%) | **527** (50.4%) | **7** (0.67%) | **1** (0.1%) | **1046** (100%) |

*1 artifact (#6423) did not have any provenience information or collection method information

**Table 4.2 - Feature Area 1 Material Collection Methods**

| **Material** | **Excavation** | **Quad Bag** | **Unknown** | **TOTAL** |
|---|---|---|---|---|
| Chert | 9 | 24 | 0 | **33** |
| Quartz | 14 | 4 | 1 | **19** |
| Quartzite | 62 | 22 | 0 | **84** |
| **Material** Cont'd | **Excavation** Cont'd | **Quad Bag** Cont'd | **Unknown** Cont'd | **TOTAL** Cont'd |
| Red Ochre | 6 | 0 | 0 | **6** |
| Slate | 7 | 0 | 0 | **7** |
| Unidentified | 3 | 0 | 0 | **3** |
| TOTAL | **101** (66.4%) | **50** (32.9%) | **1** (0.65%) | **152** (100%) |

**Table 4.3 - Feature Area 2 Material Collection Methods**

| Material | Excavation | Quad Bag | Unknown | Total |
|---|---|---|---|---|
| Chert | 7 | 90 | 0 | **97** |
| Quartz | 5 | 1 | 0 | **6** |
| Quartzite | 138 | 126 | 0 | **264** |
| Red Ochre | 2 | 4 | 0 | **6** |
| Slate | 4 | 0 | 0 | **4** |
| Unidentified | 3 | 6 | 0 | **9** |
| **TOTAL** | **159** (41.2%) | **227** (58.8%) | **0** (0%) | **386** (100%) |

*Weight of Artifacts via Material*

There are five categories of stone material identified for Area 11, including: chert, mica, quartz, quartzite, and slate (the samples of decayed wood and red ochre are discussed within the Sample section). As the weights were taken in grams, anything less than 0.1 grams was marked as such, this means the total weight will vary slightly if weighed more accurately in the future. The total weight of the material in Area 11 is 32, 229.1 grams (Table 4.4). The weight of all material in Feature Area 1 is 16, 749.4 grams (Table 4.5), and the weight of all stone material in Feature Area 2 is 10, 768.4 grams (Table 4.6). The percentage of unidentified material is high as it contains the five anvil stones. If the weight of the anvil stones were removed (28,303 grams) the unidentified category would then be 460 grams and constitute 11.7% of the overall material weight. The percentages for the remaining materials would then be 2.7% chert, 0.003% mica, 6.7% quartz, 77.5% quartzite, and 1.5% slate. If the weight of the two anvil stones in Feature Area 1 were removed, the total weight would then be 1,124.2 grams with the unidentified materials constituting 524 grams. The new percentages would be 3.3% chert, 8.4% quartz, 38.6% quartzite, 3.1% slate, and 46.6% unidentified material. If the weight of the two anvil stones in Feature Area 2 were removed, the total would then be 1,472.4

grams with the unidentified materials constituting 15.3 grams. The new percentages would be 1.68% chert, 5.7% quartz, 90.2 % quartzite, 1.38% slate, and 1.04% unidentified.

**Table 4.4 - Weight of Artifacts via Material**

| Material | Weight (grams) | Percentage |
|---|---|---|
| Chert* | *105.5* | *0.3%* |
| Mica | *0.1* | *Less than 0.0%* |
| Quartz** | *261.3* | *0.8%* |
| Quartzite*** | *3042.3* | *9.4%* |
| Slate**** | *56.9* | *0.2%* |
| Unidentified | *28763.0* | *89.2%* |
| **TOTAL** | **32229.1** | **100%** |

*138 pieces marked as under 0.1 gram and one without a weight; ** 2 pieces under 0.1 gram; ***23 pieces marked as under 0.1 gram and 3 without weight; ****2 pieces marked as under 0.1 gram

**Table 4.5 - Feature Area 1 Material Weight Totals**

| Material Type | Weight in Grams | Percentage of F1 |
|---|---|---|
| Chert* | *36.9* | 0.2% |
| Quartz ** | *94.1* | 0.6% |
| Quartzite*** | *434.0* | 2.6% |
| Slate | *35.4* | 0.2% |
| Unidentified | *16149.0* | 96.4% |
| **TOTAL** | **16749.4** | **100%** |

*11 pieces weighed under 0.1 gram; ** 2 pieces weighed under 0.1 gram; ***4 pieces weighed under 0.1 gram

**Table 4.6 - Feature Area 2 Material Weight Totals**

| Material Type | Weight in Grams | Percentage of F2 |
|---|---|---|
| Chert* | *24.7* | 0.2% |
| Quartz | *84.0* | 0.8% |
| Quartzite** | *1328.1* | 12.3% |
| Slate | *20.3* | 0.2% |
| Unidentified*** | *9311.3* | 86.5% |
| **TOTAL** | **10768.4** | **100%** |

*42 pieces weighed under 0.1 gram; **22 pieces under 0.1 gram; ***3 pieces weighed under 0.1 gram and the pestle fragment did not have a weight

*Artifact Type by Material*

There are a total of 21 different artifact classifications for FjCa-51, Area 11 (Figure 4.1). Figure 4.3 shows material distribution; Figure 4.4 shows the artifact classification breakdowns by material for the whole of Area 11.

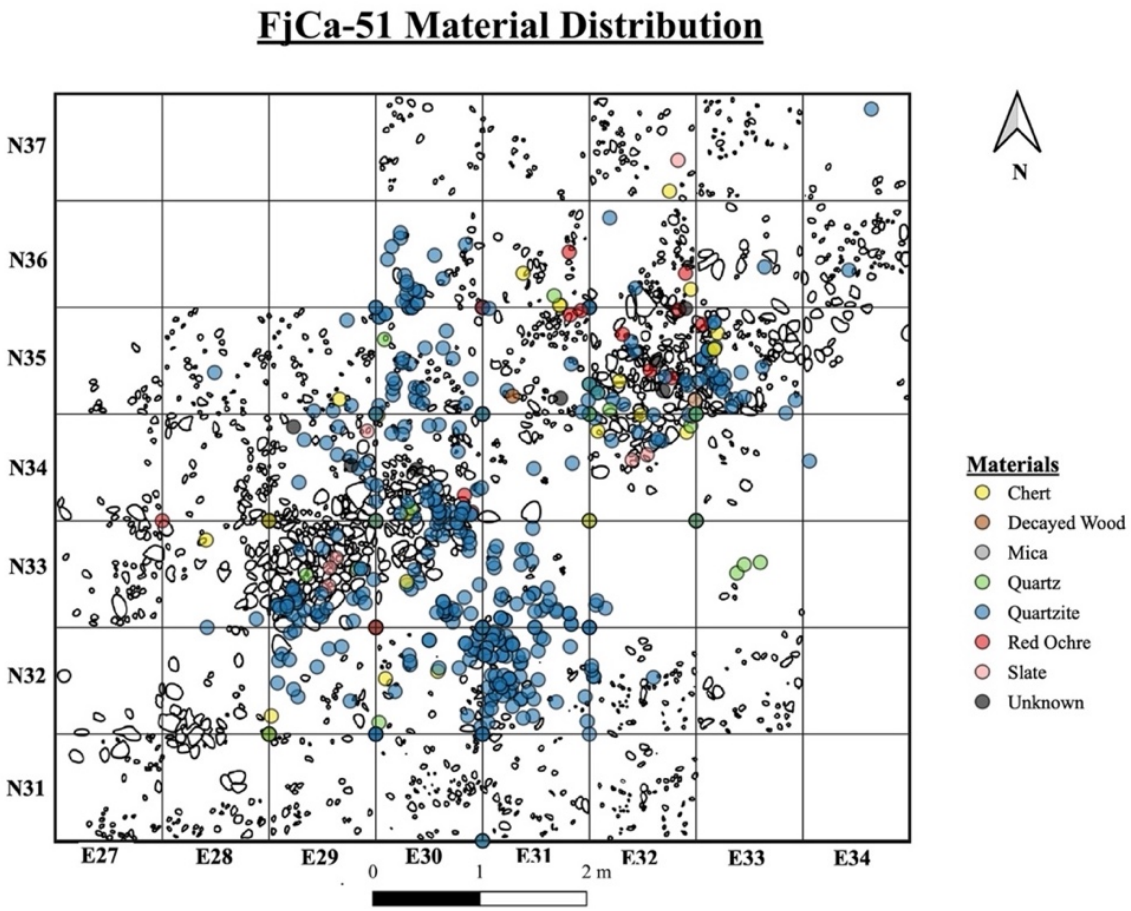



**Figure 4.3– Area 11 material distribution**

For Feature Area 1 specifically, there are a total of 11 different artifact classifications and for Feature Area 2 there are 18 different classifications (Figures 4.5 and 4.6). The artifact classification type will be discussed, in conjunction with the material from which they were manufactured, in the discussion at the end of this section.

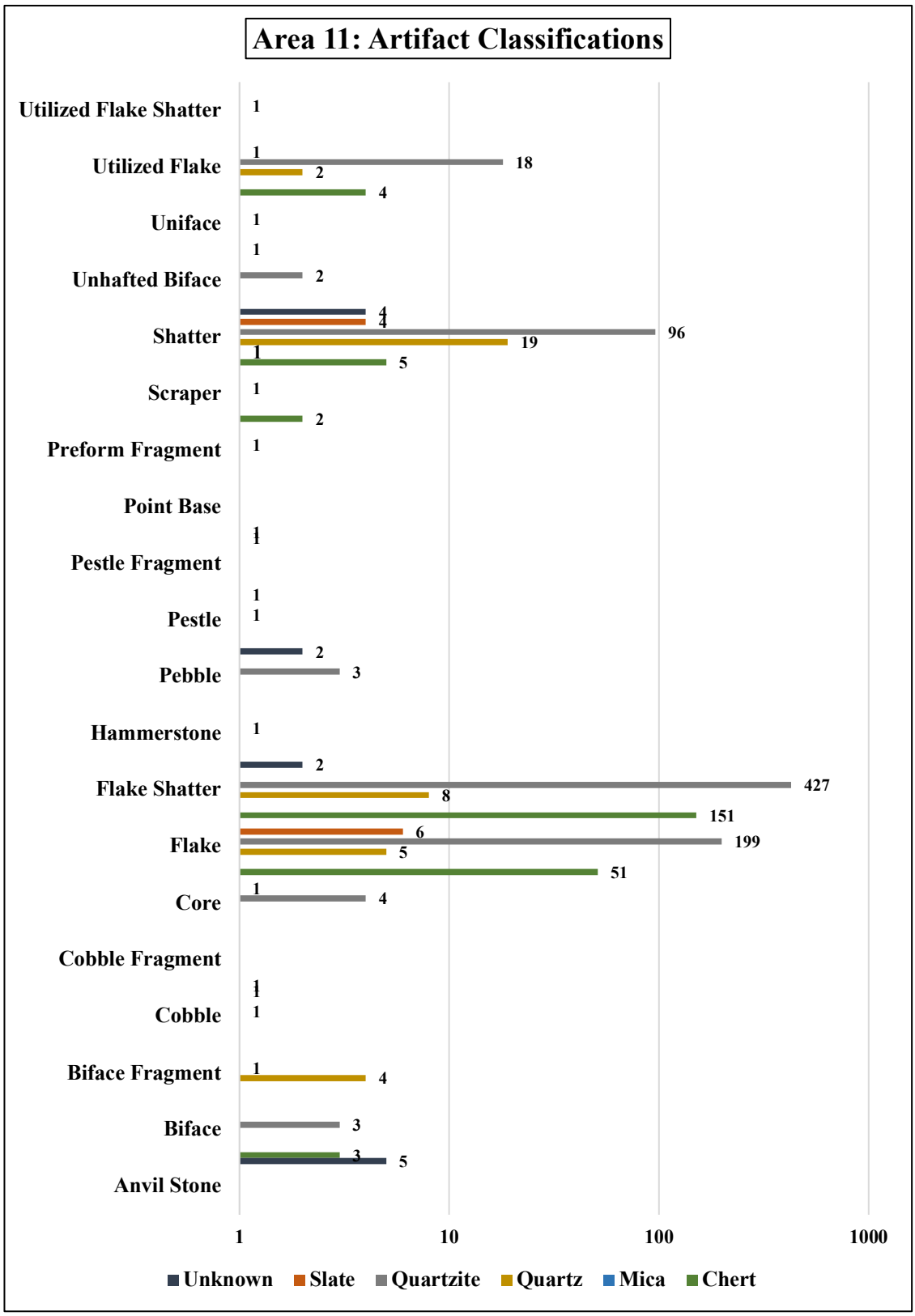



**Figure 4.4 – Artifact classifications by material**

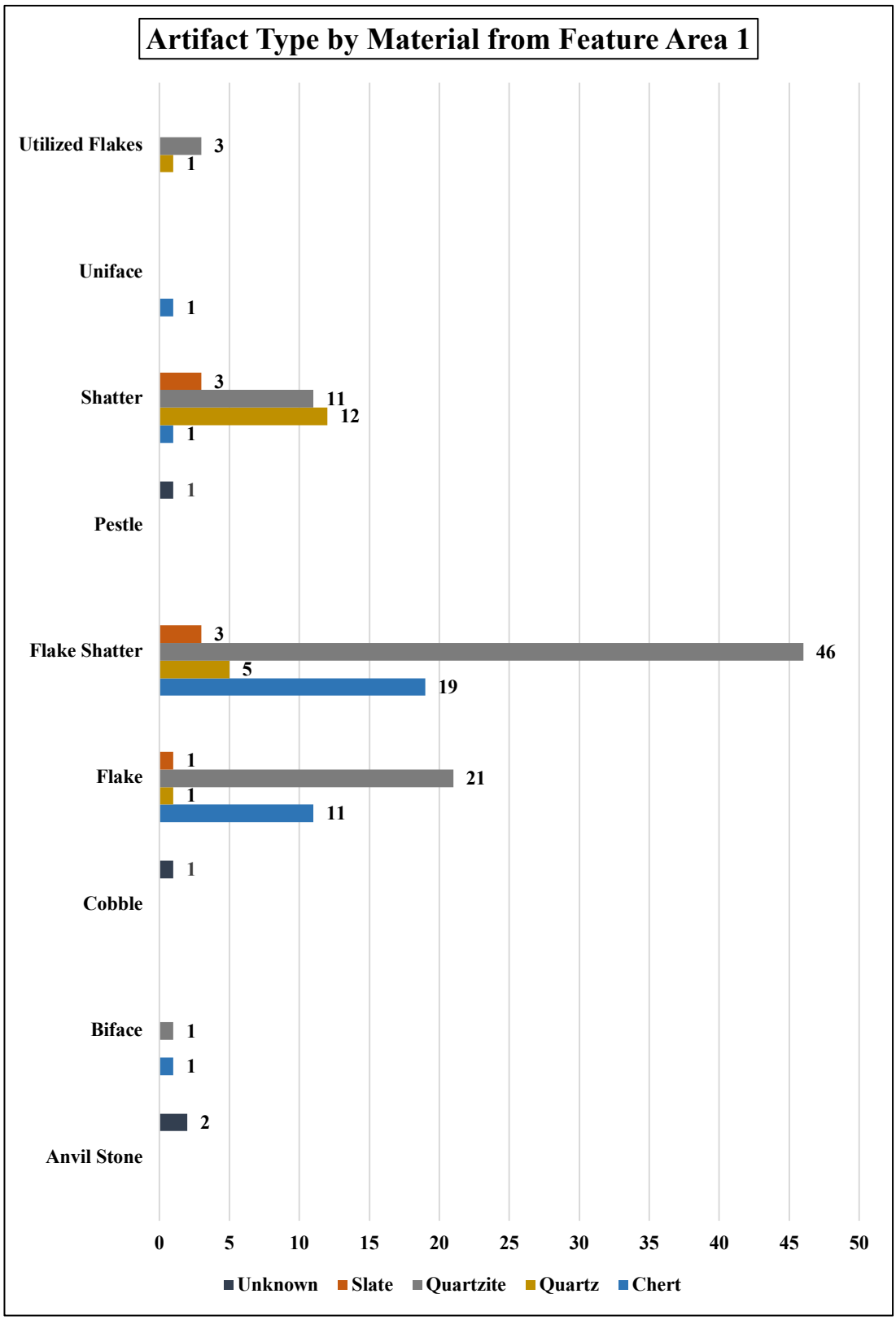



**Figure 4.5- Feature Area 1 artifact types by material**

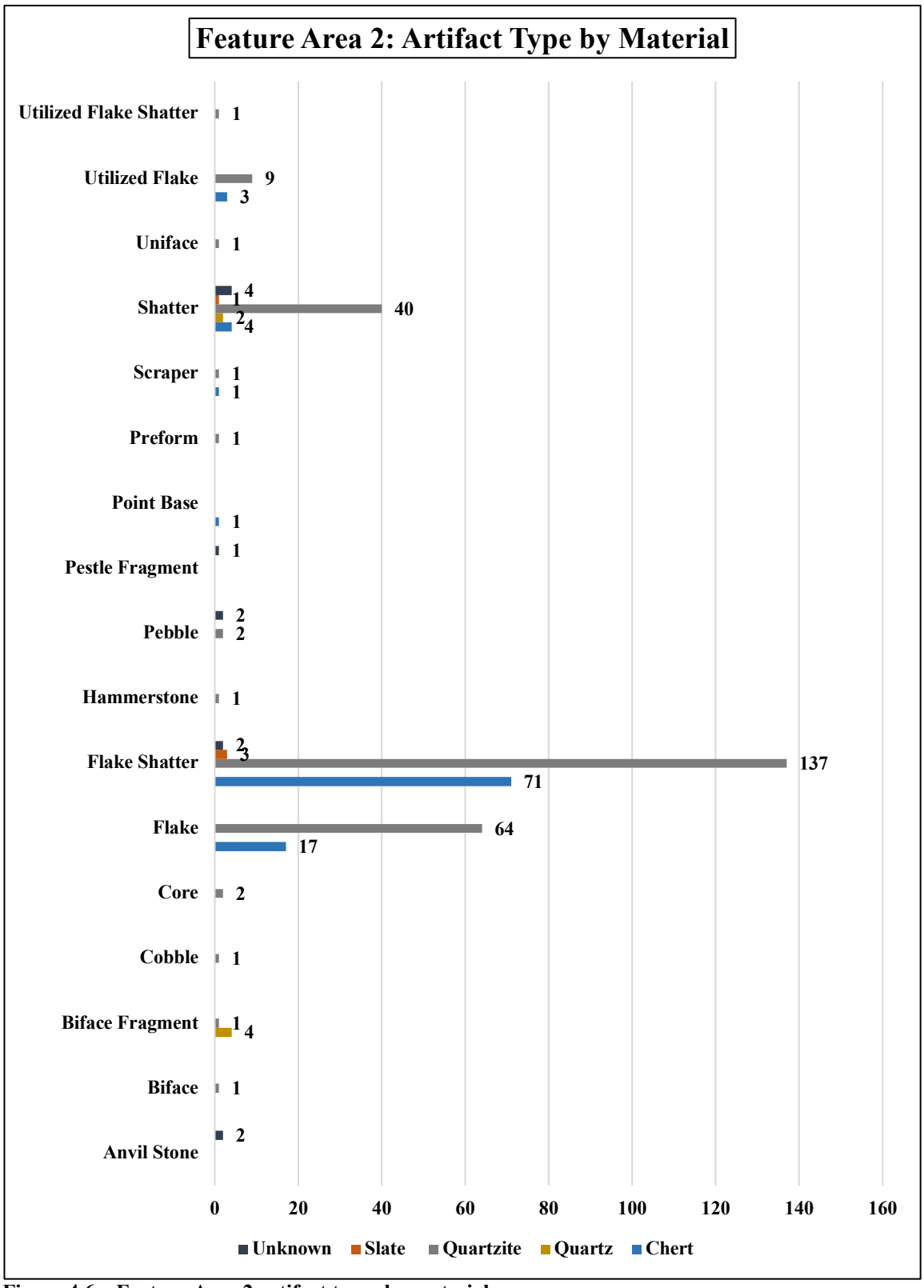



**Figure 4.6 – Feature Area 2 artifact types by material**

*Artifact Colours by Material*

A Munsell Geological Colour Chart (Munsell 2004) was used to identify the colour for each artifact in the FjCa-51 Area 11 assemblage. A total of 67 colour variations were identified, and these have been arranged into 11 groups: black, brown, grey, mixed (more than one colour present), olive, orange, pink, purple, red, translucent, and white. These 11 groups were created based on the general colour of the artifacts. For example, pale yellowish brown is in the brown category as it is a shade of brown and blackish red is within the red category as it is a shade of red. The results in Figure 4.7 show there are four main colours groups: brown, grey, pink, and red. These four main colour categories are associated with the main artifact material types of quartzite and chert.

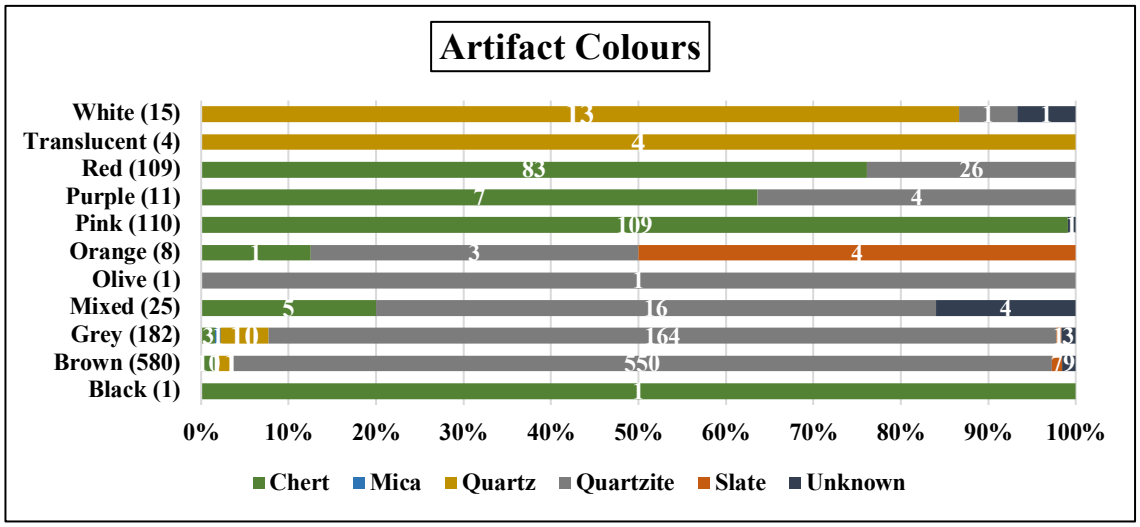



**Figure 4.7 – Area 11 colours**

There is a total of 28 different colour classifications for the material excavated in the Feature Area 1. They have been broken down into these categories: brown, grey, mixed, orange, pink, purple, red, translucent, and white (Figure 4.7). There are 44 recorded colours for the materials collected in Feature Area 2 that are broken down into

the following 10 categories: black, brown, grey, mixed, olive, orange, pink, purple, red, and white (Figure 4.8).

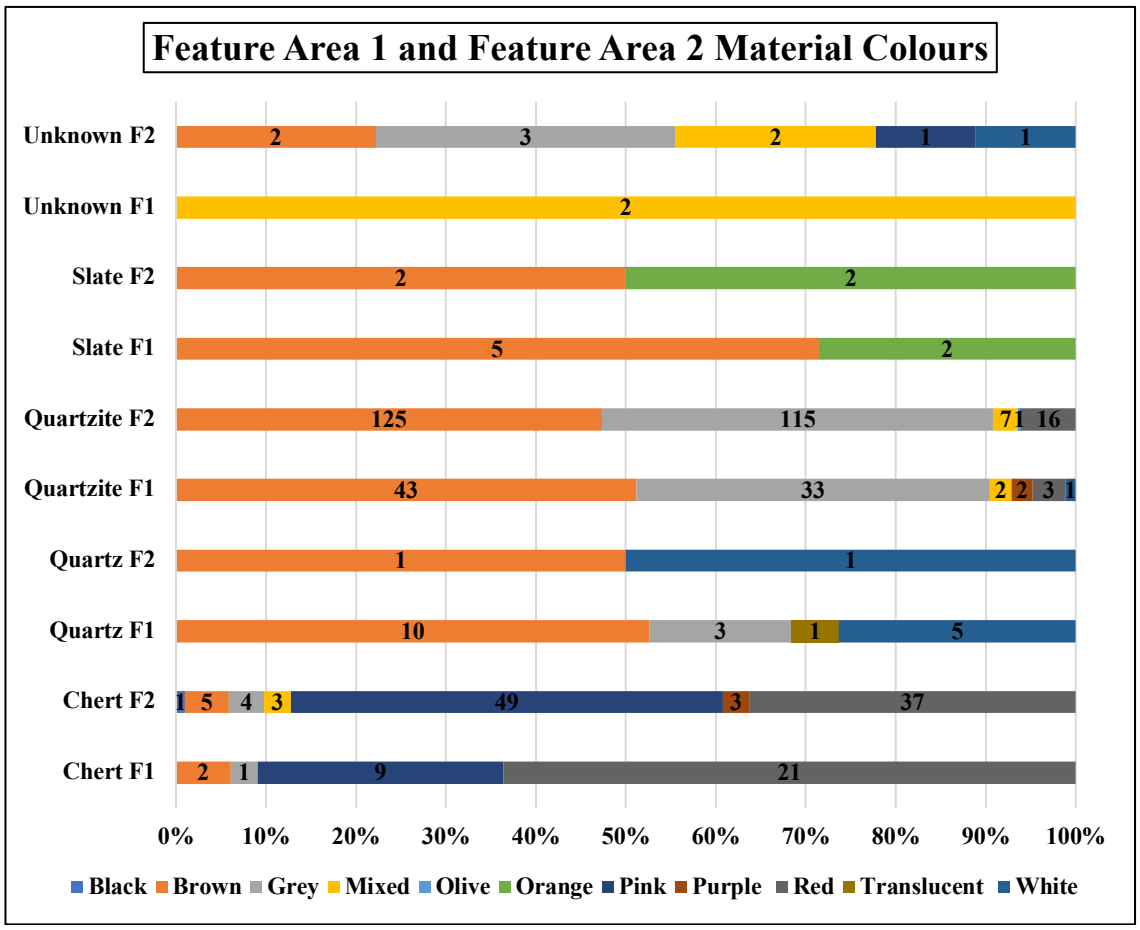



**Figure 4.8 – Feature Area 1 (F1) and Feature Area 2 (F2) material colours**

*Manufacturing Techniques*

The FjCa-51 Area 11 lithic assemblage contains evidence of the manufacturing techniques that produced the specimens, including forms created by percussion and pressure (Figure 4.9). The most common manufacturing technique identified is percussion, with 185 artifacts showing signs of percussive manufacturing. This technique creates more flake debitage and shatter as well as thicker specimens. Evidence of this is seen with quartzite in Figure 4.9. Chert specimens within the assemblage were mainly

manufactured via pressure which creates smaller and thinner flakes that are less likely to break; this manufacturing technique is indicative of finishing, resharpening, and reshaping activities. Within the overall assemblage, the specimens associated with Feature Area 1 and Feature Area 2 present similar trends in manufacturing techniques, as seen in Figures 4.10 and 4.11.

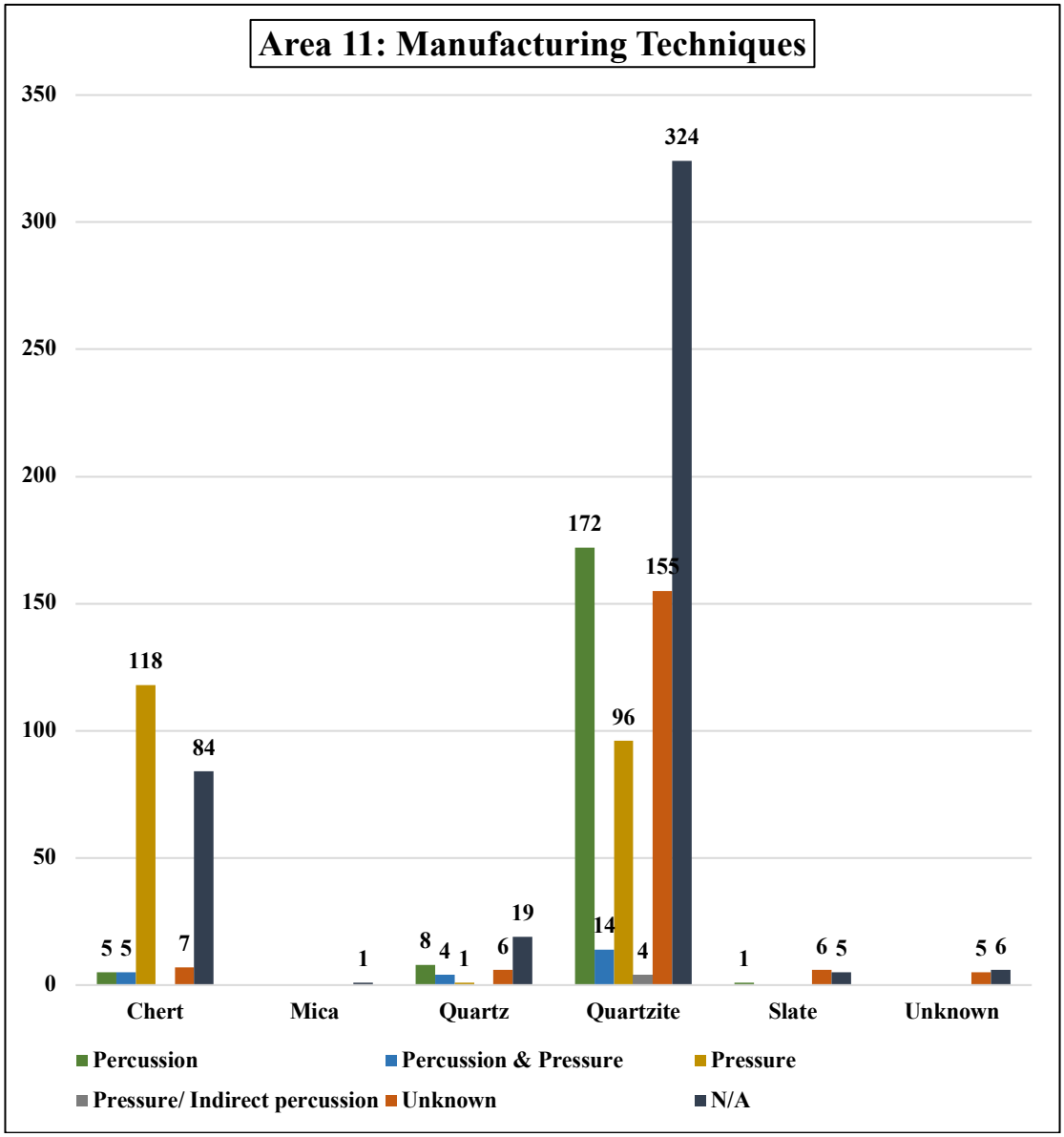



**Figure 4.9 – Area 11 manufacturing techniques** (*N/A because material was collected by quad bag)

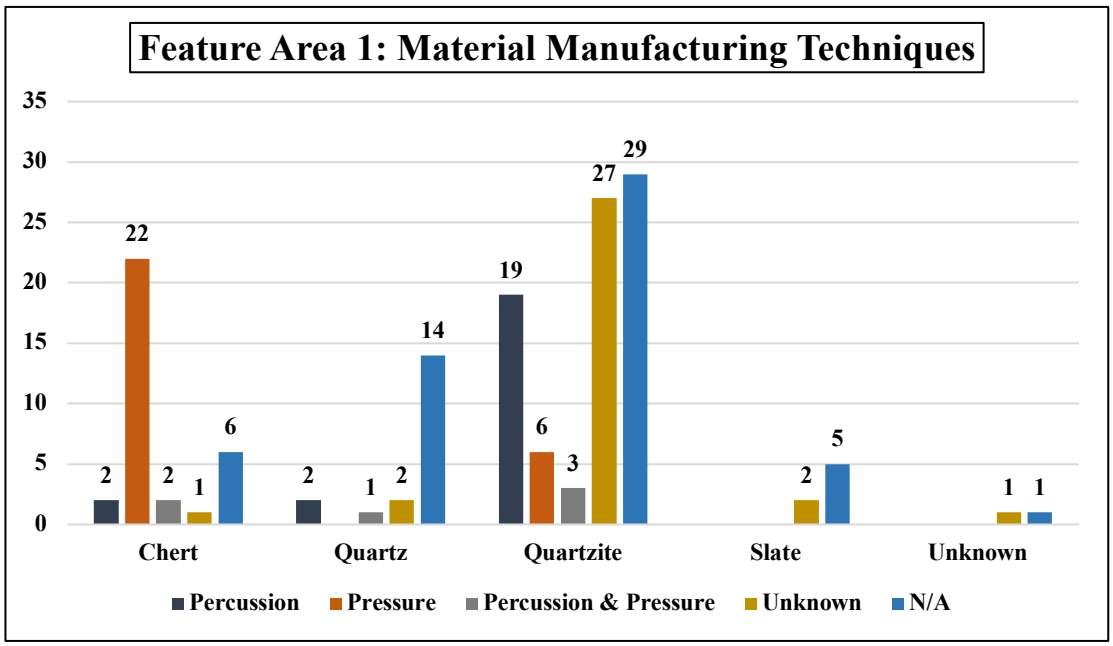



**Figure 4.10 – Feature Area 1 material manufacturing techniques**

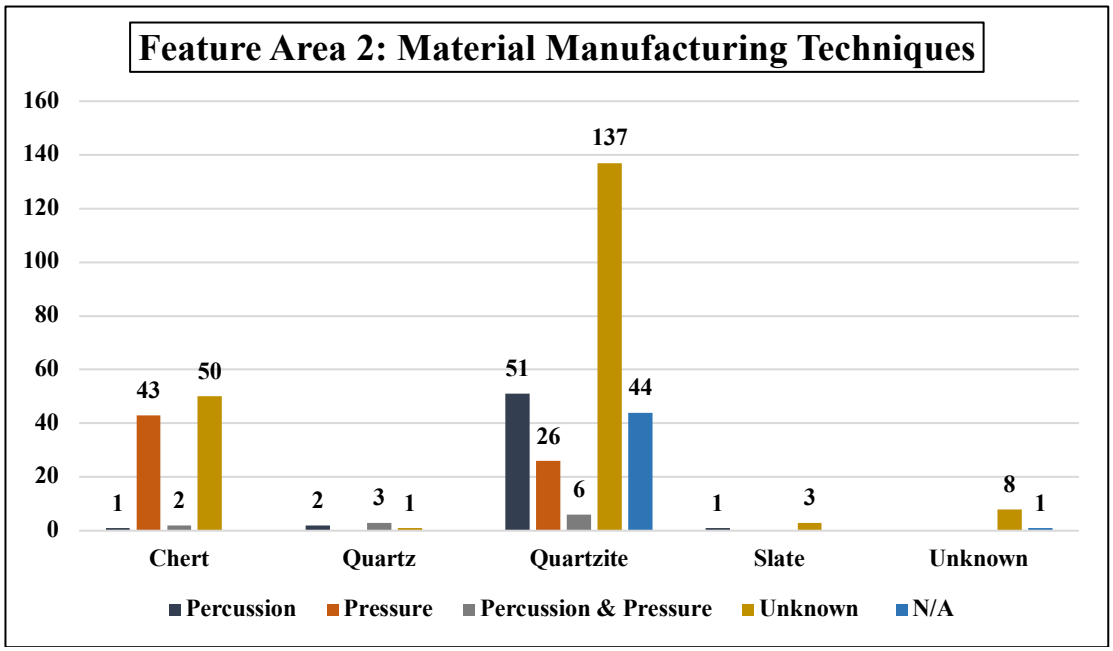



**Figure 4.11 – Feature Area 2 material manufacturing techniques**

*Artifact Scatters by Unit*

All artifacts were grouped by unit and the results in Figures 4.12, 4.13, 4.14, and 4.15 show that the units with the highest number of artifacts are those associated with

either Feature Area 1 or Feature Area 2. Minimal numbers of artifacts are found outside these feature areas which suggests that the two feature areas were the focus of activities within Area 11. Feature Area 1 encompassed a total of seven units within FjCa-51 Area 11. These are N34E32, N34E33, N34E34, N35E32, N35E33, N36E32, and N36E33. Feature Area 2 encompassed a total of six units within FjCa-51 Area 11, including N32E29, N33E29, N33E30, N34E28, N34E29, and N34E30. Feature Area 1 and Feature Area 2 stone artifact distributions show a concentration around the respective combustion features (Figure 4.12), showing that stone tool production and maintenance was concentrated around these features.

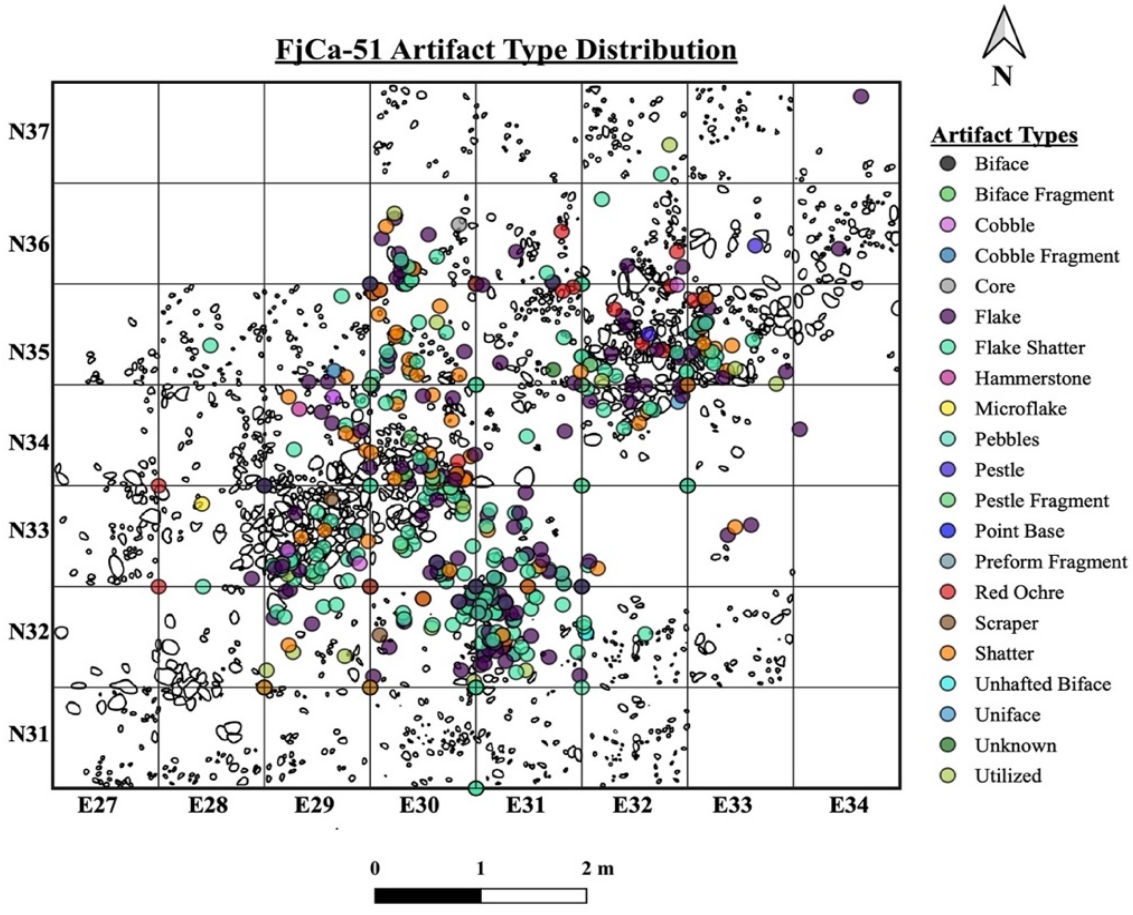



**Figure 4.12 – Area 11 artifact distribution map**

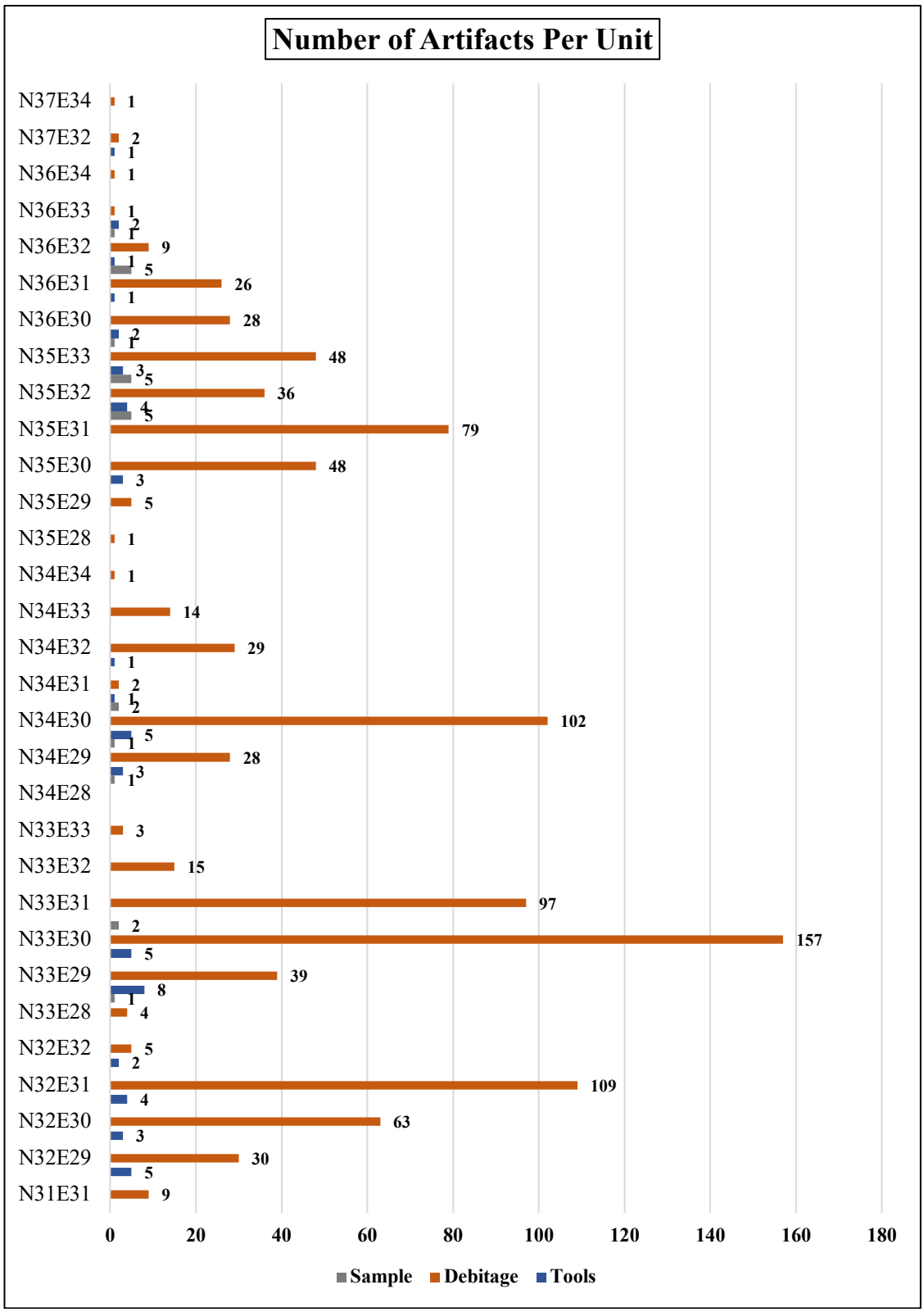



**Figure 4.13– Number of artifacts per unit**

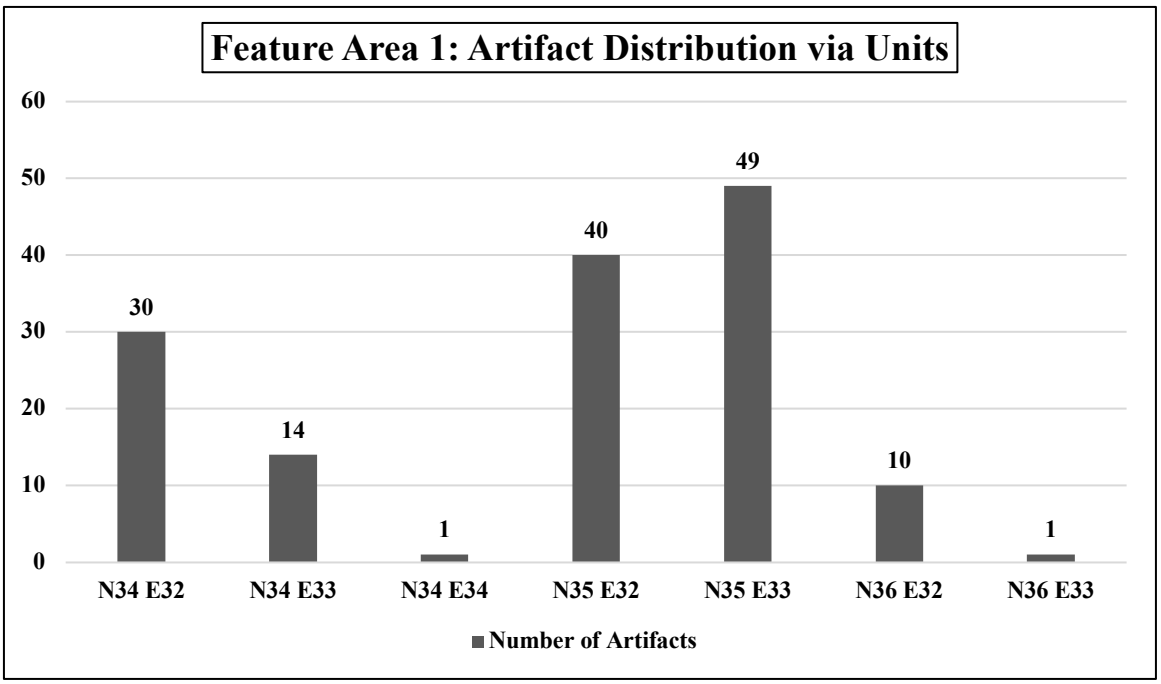



**Figure 4.14 – Feature Area 1 artifact distribution via units**

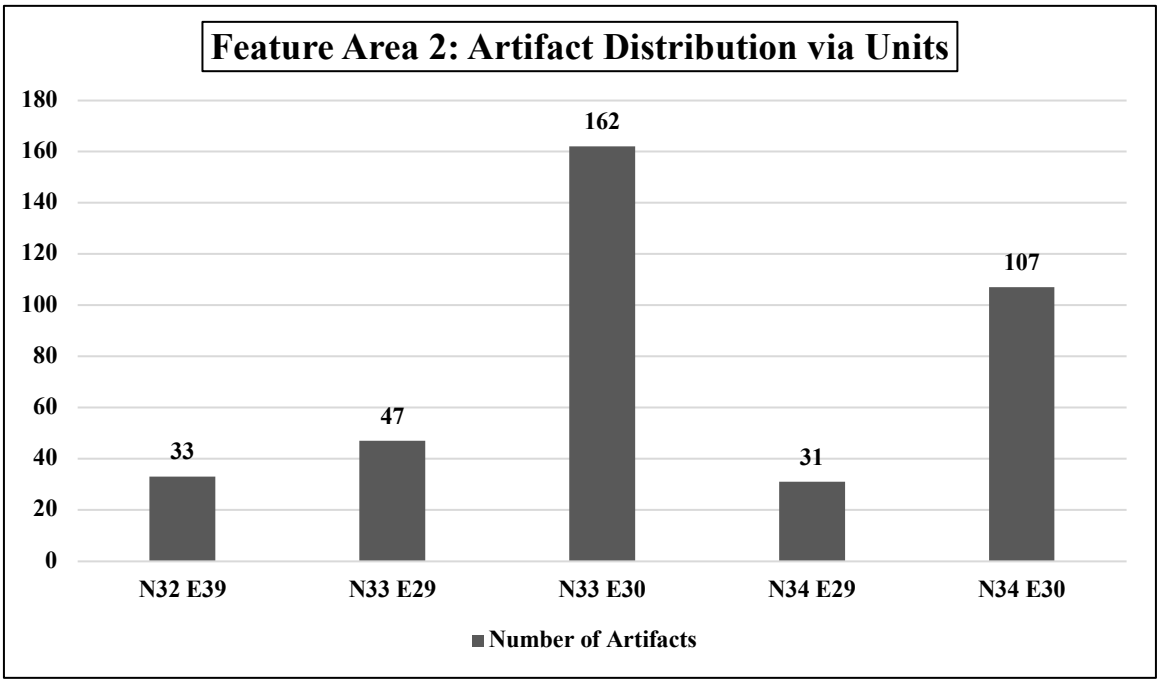



**Figure 4.15 – Feature Area 2 artifact distribution via units**

*Discussion*

The data presented above shows that quartzite was the most used raw material at FjCa-51 Area 11. Quartzite constitutes 77.5% of the total weight of raw material and is evidence of the use and importance of local materials within Area 11. The rest of the raw materials (chert, mica, slate, and unidentified) constitute those that were brought to the site in smaller quantities (3%) or as a complete tool, from other areas. This trend is also mirrored in Tables 4.5 and 4.6, which look at Feature Area 1 and Feature Area 2 materials weights.

In terms of raw material use, Figure 4.3 shows that the most used material was quartzite, which was used for both formal and informal tools. Chert was used for more formal tools and there is evidence of resharpening and reshaping within the flake and flake shatter categories. Slate was recovered as shatter and in low quantities, suggesting the material was brought to the area and abandoned as it was not worked further. Quartz was recovered as utilized flakes, shatter, flake shatter, and flakes suggesting the material was used to create informal tools quickly. Mica was recovered in such a small amount that it could have been in the soil deposits within the area or was brought from another area and discarded in Area 11. Another possibility is that the mica could have been used as part of decorative jewelry, or the small amount found could be associated with pieces of mica being chipped off a larger piece (Boulanger et al. 2017). Two mica sheets were recovered during excavation of the Rattlers Bight Cemetery (ca. 4000-3500 years B.P.), situated 198 km east of Sheshatshiu. Components of this cemetery are in proximity, time wise, to the earliest FjCa-51 components, and show that mica was available and important to people in Labrador at this time (Fitzhugh 2006; Hood 1993). When looking at Feature

Area 1 and Feature Area 2 (Figures 4.5 and 4.6), Feature Area 2 has both more artifacts and artifact types. Both areas contained utilized flakes, shatter, flake shatter, flakes, cobbles, bifaces, and anvil stones. However, Feature Area 2 also contained utilized flake shatter, a scraper, preform, point base, pestle fragment, pebbles, a hammerstone, a core, and a biface fragment. This suggests Feature Area 2 was more heavily used than Feature Area 1, perhaps due to different activities being conducted within the areas. Feature Area 2 also had more artifacts associated with it, and the largest single unit concentration of artifacts was unit N33E30 (Figure 4.15). Without the anvil stones, Feature Area 2 artifacts weigh a total of 1472.4 grams compared to 1124.4 grams for Feature Area 1.

Most of the tools and debitage were recovered from Feature Area 2, including a large concentration of debitage associated with an area of compact gravel to the southwest of the Feature Area. Feature Area 2 also contained multiple nodules of red ochre, which can be used in tool making as an additive in adhesive for hafting (Helwig et al. 2014) and for decoration (Wolff et al. 2018). Looking at all this evidence it appears that stone tools were being repaired and/or produced at Feature Area 2 (Figure 4.12). One would expect to find all the stages of tool manufacturing and discarded tools within an area being utilized for the production and maintenance of tools.

Analyzing the different colours of the stone assemblage may aid in understanding where the materials were procured. The brown, grey, and white quartzites are from local sources, such as beach cobbles (that are still in the area) which are known to have been utilized, and they are used most frequently on site. Whereas red quartzite was recovered in a small amount (n=26) suggesting it was not local or was local but less abundant than other colours; cobbles and cores of red quartzite have been found in other areas of FjCa-

51 (Neilsen 2010b, 2017). The use of red quartzite and local quartzite, along with chert and quartz aligns with the common material type and colours for the Brinex and Charles Complexes as described by Fitzhugh for North West River (Fitzhugh 1972). The fine-grained chert presents in all colour groups aside from white, translucent, and olive and may have been collected from the Seal Lake region of interior Labrador (McCaffrey et el. 1989). Figure 4.7 shows this divide between the use of local versus non-local quartzite at the site when using colour as the main classification. It is of interest to note that the most common chert colour within the Brinex complex is purple (Fitzhugh 1972), of which Area 11 only has seven specimens. Likewise, the Charles complex cherts are commonly pink with Area 11 having 109 pink specimens. The material colours and frequencies recovered from Area 11 seem to be both Brinex and Charles, or Saunders if one is to combine both complexes, as has been suggested (Fitzhugh 1972, Nagle 1978, Neilsen 2006). The colours present in Feature Area 1 and Feature Area 2 (Figure 4.8) show a mixture of Brinex and Charles complex material colours, which provides evidence of contemporaneity between both feature areas. I would expect to see different variations in the materials and colours chosen if the two areas were dis-contemporaneous from one another, as their respective radiocarbon dates imply. This information will be examined further in the discussion at the end of this chapter.

The analysis of manufacturing techniques on various raw materials provides clues as to how the raw materials were viewed by the people who used them. The results in Figure 4.9 indicate that quartzite was a local material that was fully reduced within Area 11. This explains the evidence for percussive manufacturing in the assemblage, as it is used most often during the initial reduction sequences where the knapper is trying to

achieve the rough shape of an artifact before finishing it with pressure manufacturing. Percussive manufacturing is also prone to creating more flakes and flake shatter than pressure flaking, whereas pressure flaking is utilized most often to finish and sharpen/resharpen a tool. Therefore, the chert material manifests mostly as smaller flake and flake shatter as the chert specimens were most likely brought to the location as complete or almost complete tools that only needed resharpening/reshaping. This trend is also seen in the materials within Feature Area 1 and Feature Area 2 (Figure 4.10 and Figure 4.11).

## 4.2 Area 11 Tools

There is a total of 52 tools, both formal and informal, associated with Area 11. Quartzite, chert, quartz, and slate were the materials out of which these tools were created. This section analyzes the weight of all tools via material, the types of tools created via material and their colours. This information will then be used to infer any associations between raw material type, colour, and the tool created.

### *Weight of All Tools*

The total weight of all tools within Area 11 is 1181.1 grams, with quartzite being the most common material for tool production at 87.7% (Figure 4.16). Chert constitutes 5.3% of the material utilized for tool production, with quartz being 6.4% and slate being 0.4% of raw material used for tool production.

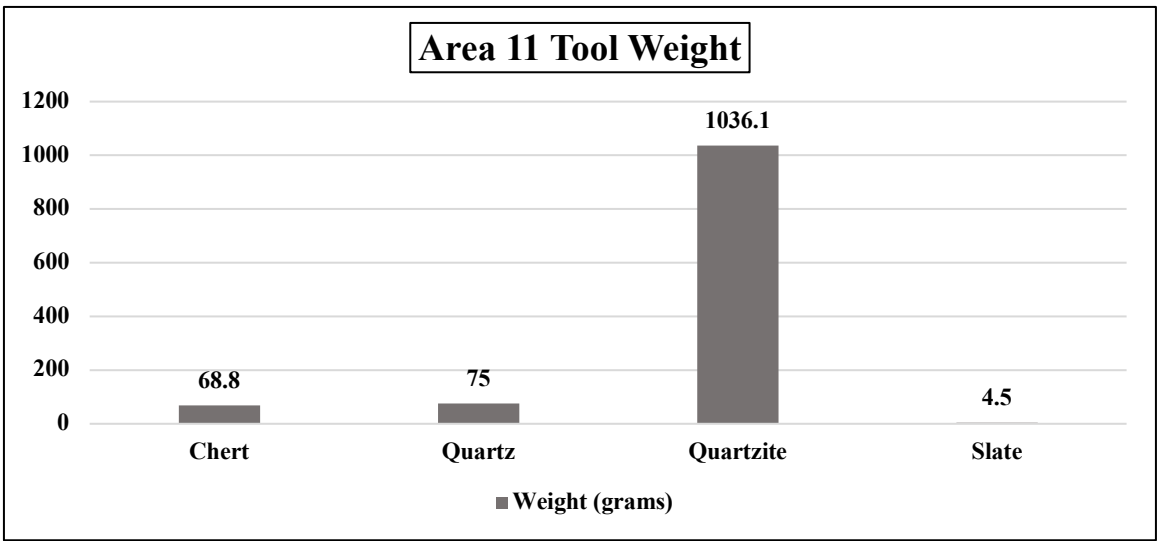



**Figure 4.16 – Area 11 tool weight by material**

*Tool Types and Colour*

There are twelve different tool classifications within Area 11, including biface, biface fragment, cores, hammerstone, pestle, pestle fragment, point base, scraper, uniface, utilized flake, and utilized flake shatter (Figure 4.16). The main colour grouping that tools were made from is brown at 42.6% (n=23), with grey being the second most common colour at 25.9% (n=14), and the rest of the colours making up the remaining 31.5% (n=17) (Figure 4.16). Feature Area 2 contained more tools (n=27) than Feature Area 1 (n=8) and more of a variety of tools; Feature Area 2 contained all the same tool types as Feature Area 1, along with biface fragments, a hammerstone, a pestle fragment, a point base, and two scrapers (Figure 4.18). For the tool colours, brown was utilized the most, followed by grey, mixed colours, red, pink, white, and lastly translucent (Figure 4.19).

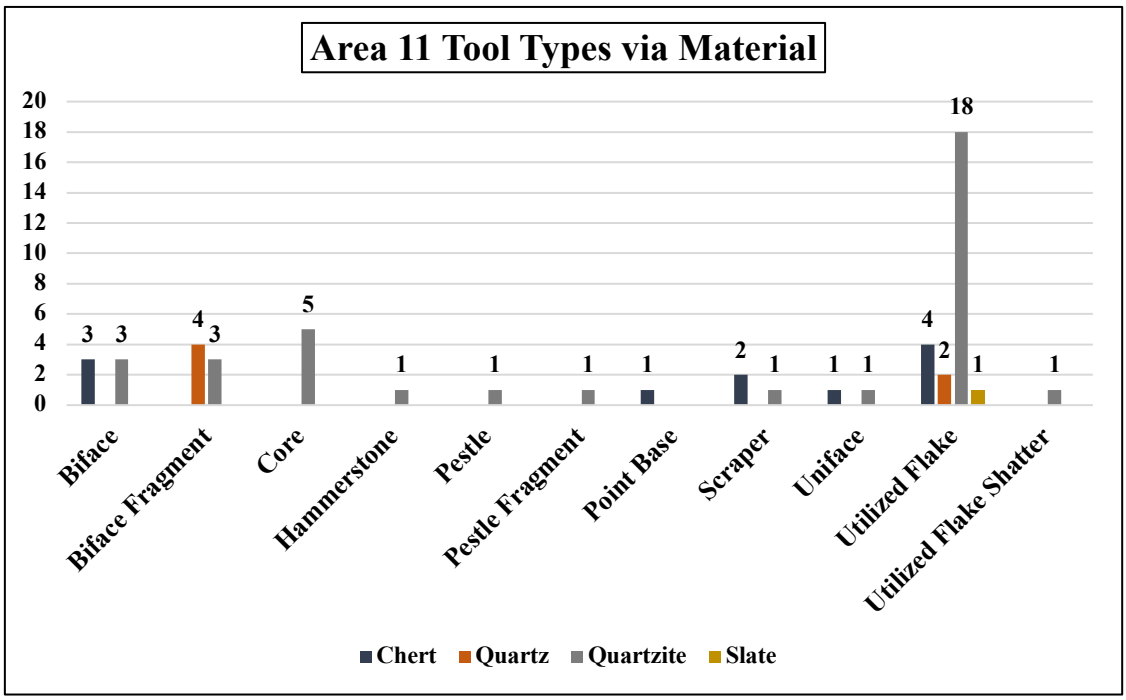



**Figure 4.17 – Area 11 tool types via material**

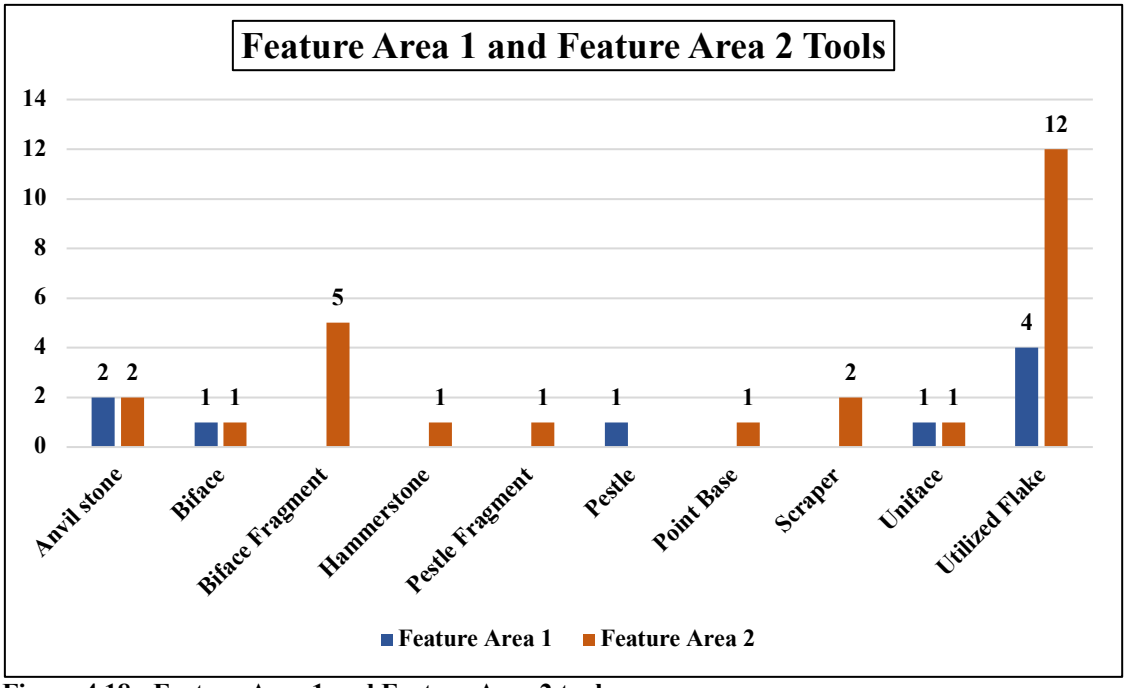



**Figure 4.18 - Feature Area 1 and Feature Area 2 tools**

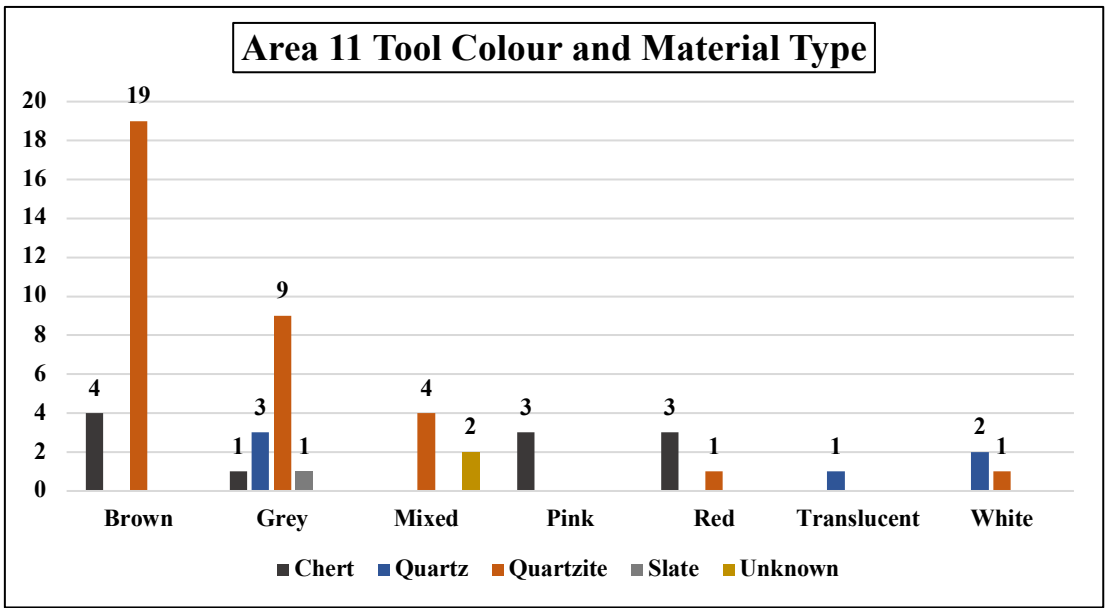



**Figure 4.19 – Area 11 tool colour and material type**

*Discussion*

The total weight of tools, when associated with raw material type, does follow the whole assemblage pattern of being quartzite dominant (Figure 4.16). The results show the more formal tools (biface, point base, scraper, uniface, and utilized flakes) were manufactured from chert more so than quartzite. Quartzite was being used for informal/expedient tools.

Larger-grained quartzite is less suitable for certain forms of knapping as the fracturing is harder to control and creates more debitage during the process of making a tool. Fine-grained quartzites and cherts are more suitable for knapping as there is more control over the fracturing process (Andrefsky 1998). Regardless, the edge on particular quartzite tools will still be slightly rough and jagged due to the crystalline nature of the material. In terms of tools and quartzite, it makes more sense that quartzite tools be used as cores (as in the core was used as a tool), hammerstones, pestles, and utilized flakes, as

these tools are not required to have a sharp, straight/clean edge, and the material is harder and therefore is able to withstand more force exerted on it (Pereira et al. 2017). Cherts are cryptocrystalline, however, which allows for the creation of a sharp, straight edge (Kooyman 2000). Therefore, chert is utilized for more formal tasks such as a scraper used in hide preparation or a sharp knife that creates a clean slice where large amounts of force are not needed (Pereira et al. 2017). As you can see in Figure 4.17, most informal tools are made of quartzite, whereas the cutting and projectile tools are made from chert, which is the better material when a sharp edge is needed (see Appendix B for all tools).

The types of tools present also suggest a mobile lifestyle as most tools were informal and could be manufactured easily and while on the move (Kooyman 2000). As quartzite is available in many areas of the Canadian Shield, these expedient tools were easily discarded as one was able to create new expedient tools easily (Donaldson and Kemp 1998). The idea of a mobile group of people within Area 11 can also be discerned by the presence of chert, which one had to obtain through travel.

When discussing tools within the Intermediate period, one must also discuss the colours of the tools/materials. The trend seen in Figure 4.19 does not fit with Fitzhugh's view of raw material colours used (Fitzhugh 1972). While the chert is colourful and may be referred to as Saunders chert in some instances, the colours for quartzite are not the typical red and white most notably discussed in association with the Brinex Complex; they are associated more so with descriptions of the Charles Complex (Fitzhugh 1972; Nagle 1978; Neilsen 2006).

## 4.3 Area 11 Debitage

The following sections are focused on the debitage recovered from FjCa-51, Area 11. The information discussed in this section includes weight, flake, flake shatter and shatter counts, flake shatter portions, complete versus incomplete flakes, flake and platform scar counts, as well as cortex scores.

Note that there are a total of 281 flakes within Area 11 when including the utilized flakes that are classified as tools. For analysing complete versus incomplete flakes, the utilized flakes (tools) were omitted. However, when discussing platform and flake scars, the utilized flakes were included.

*Weight of all Debitage in Area 11*

The weight of all debitage in Area 11 is 1559.7 grams (Figure 4.20). Quartzite material constitutes 83.9% of the total weight with quartz being the second highest at 11.9% followed by slate at 3.6% and chert at 0.6%.

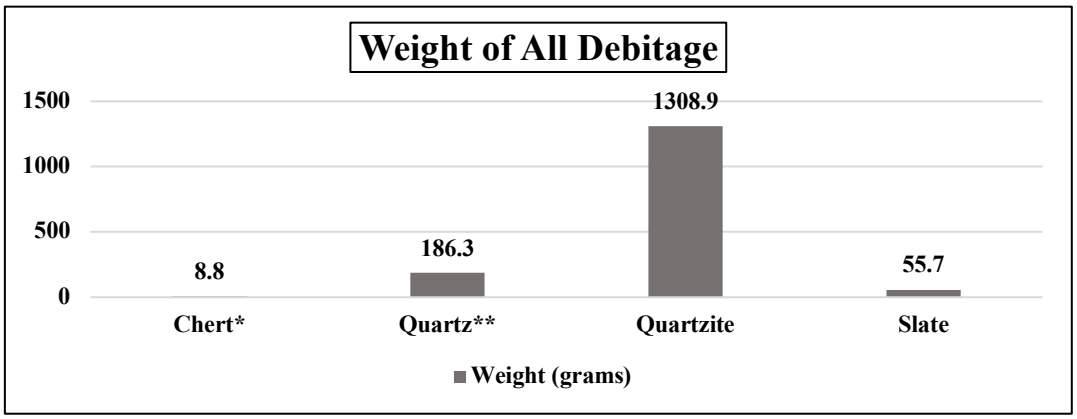



**Figure 4.20 – Weight of all debitage from Area 11** (*135 pieces under 0.1 gram; **2 pieces under 0.1 gram)

*Flakes, Flake Shatter, and Shatter*

There are 256 flakes, 591 pieces of flake shatter, and 129 pieces of shatter in Area 11. Figure 4.21 shows this information graphed against the material type. Quartzite

presented with the most flakes, flake shatter, and shatter out of all other materials. Chert had the second highest amount, with quartz, slate, unidentified materials, and mica presenting with small numbers of each.

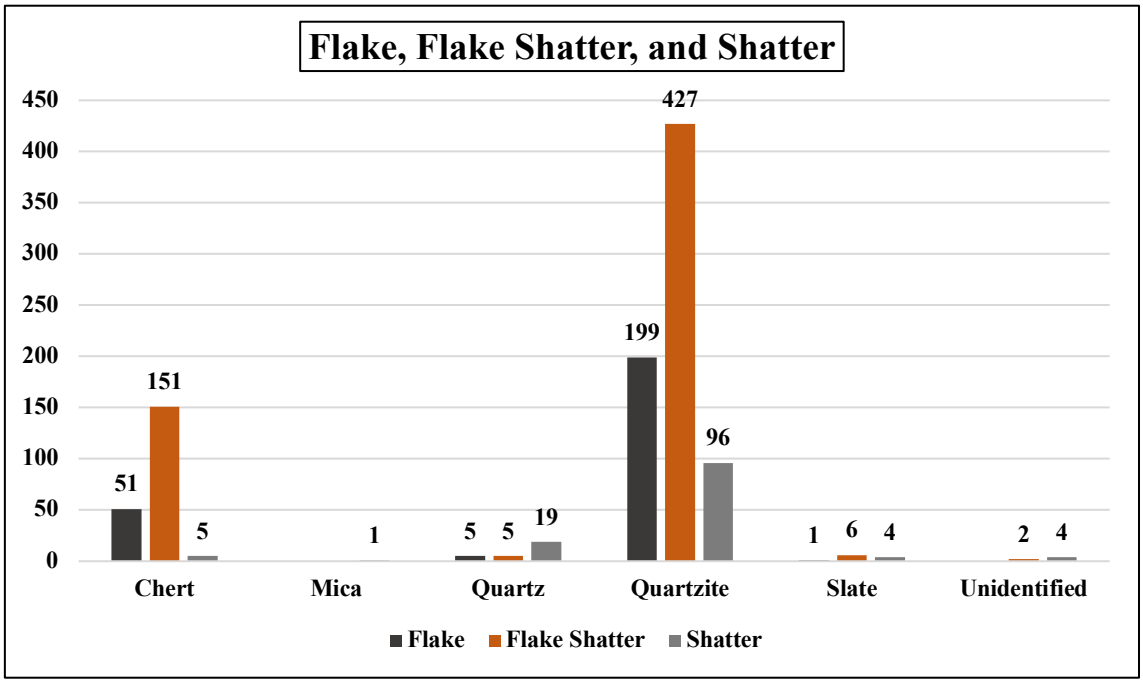



**Figure 4.21 – Area 11 flake, flake shatter, and shatter by material**

Flake shatter was analyzed based on the portion present; either proximal, medial, distal, unknown, or N/A (the category used when the artifacts were assigned to a quad bag and not individually analysed). There are 594 pieces of flake shatter present in the Area 11 stone assemblage (Figure 4.22). Of these 594 pieces of flake shatter, 5.9% (n=35) are proximal, 9.8% (n=58) are medial, 11.1% (n=66) are distal, 9.4% (n=54) are unknown, and 63.6% (n=380) are N/A.

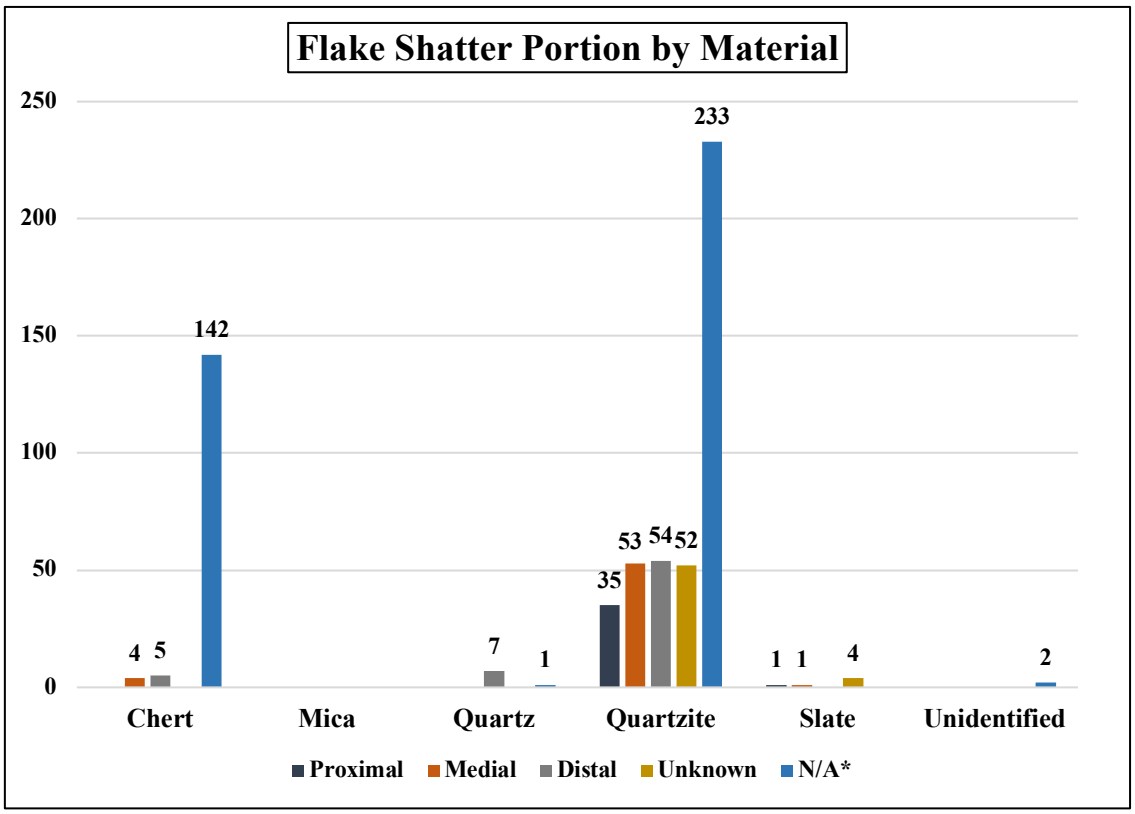



**Figure 4.22 – Area 11 flake shatter portion by material**

There is a total of 256 debitage flakes recorded in Area 11. Of these 256 flakes, 44.9% (n=115) flakes are classified as complete and 55.1% (n=141) are classified as incomplete (Figure 4.23). These categories were then further analysed based upon the material used to manufacture the flake in the discussion at the end of this section.

There are a total of 152 pieces of stone material present within Feature Area 1. Of these 152 pieces, 22.4% (n=34) are categorized as flakes. There are 67.6% (n=23) complete flakes and 32.4% (n=11) incomplete flakes (Figure 4.24). There are a total of 380 pieces of stone material present within Feature Area 2. Of these 380 pieces, 81 are categorized as flakes; 37.0% (n=30) are complete flakes and 63.0% (n=51) incomplete flakes (Figure 4.25)

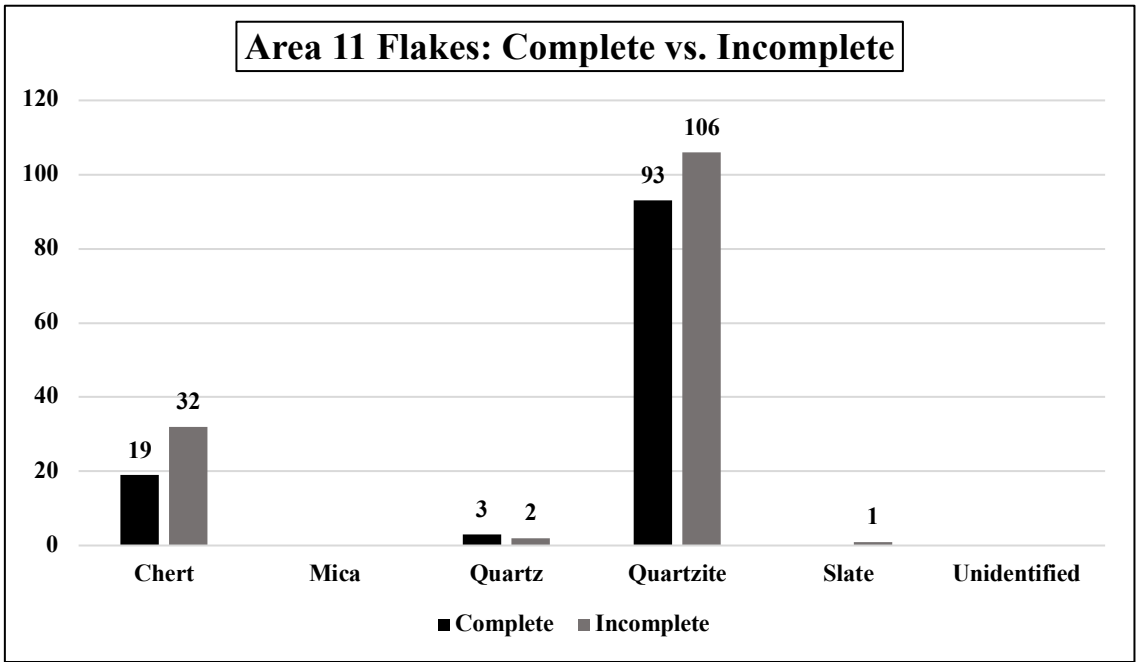



**Figure 4.23 – Area 11 complete vs. incomplete flakes**

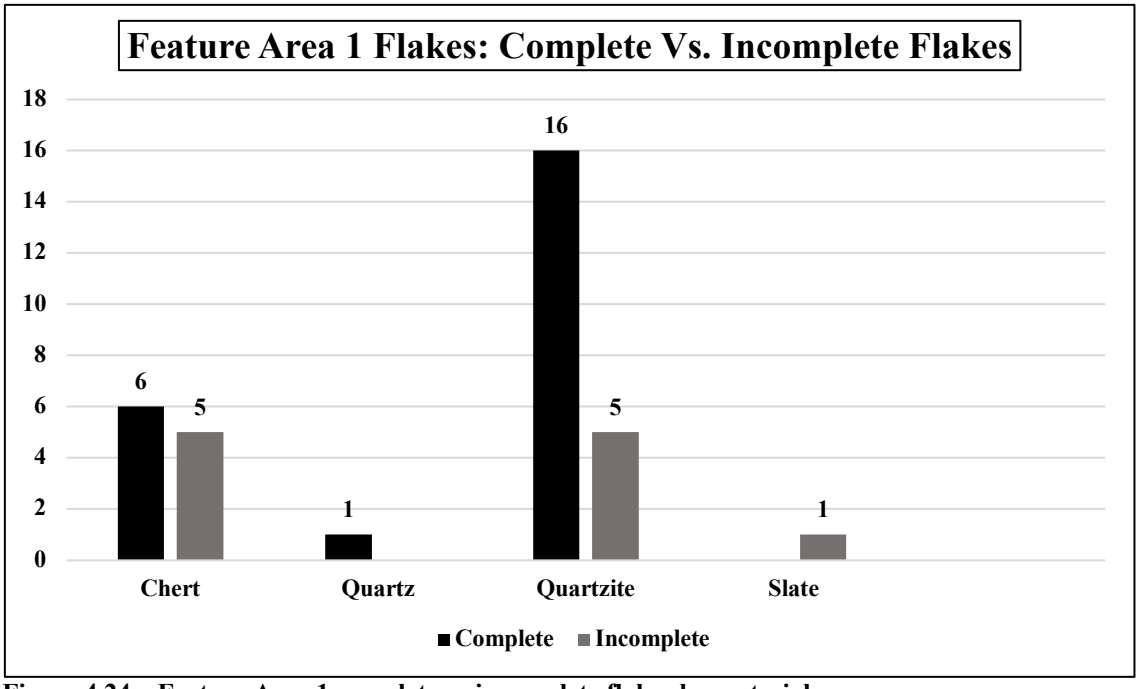



**Figure 4.24 – Feature Area 1 complete vs incomplete flakes by material**

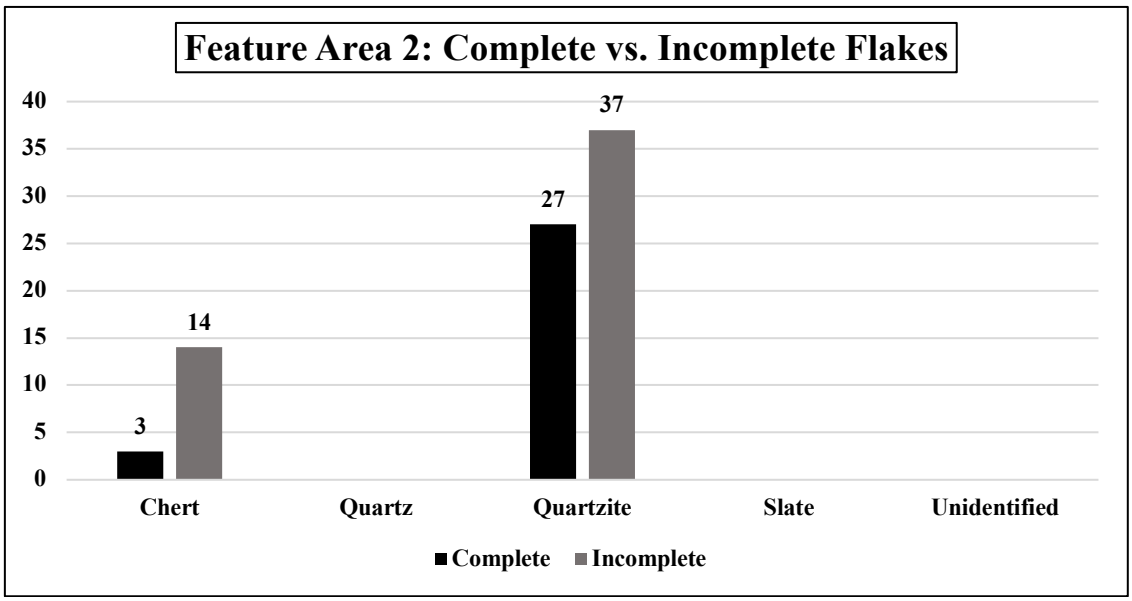



**Figure 4.25 – Feature Area 2 complete vs incomplete flakes by material**

All flakes, including utilized flakes that fall within the tool category, had the number of platform scars and the number of flake scars calculated. The number of platform and dorsal scars present correlate with the reduction stage the flake represents. The number of platform scars is as follows: unknown (a category for when I was unable to confidently assign the number of platform scars), zero, one, two, and three. The number of flake scars can range from zero to 11 along with an unknown category as above. Figure 4.26 shows that most flakes (n=158) without discernable platform scars had between zero to two dorsal scars, which is indicative of early and middle reduction stages. Whereas 71 have between three to 11 dorsal flake scars, suggesting late stage reduction. This trend continues with flakes having one platform scar (Figure 4.27) as 22 flakes had between zero to two flakes scars and 15 had between three and 11 flake scars. Within Feature Area 1, the only platform categories present are unknown, zero, one, and

three (Figure 4.31). Within Feature Area 2, the platform categories present are unknown, one, two, and N/A (Figure 4.32).

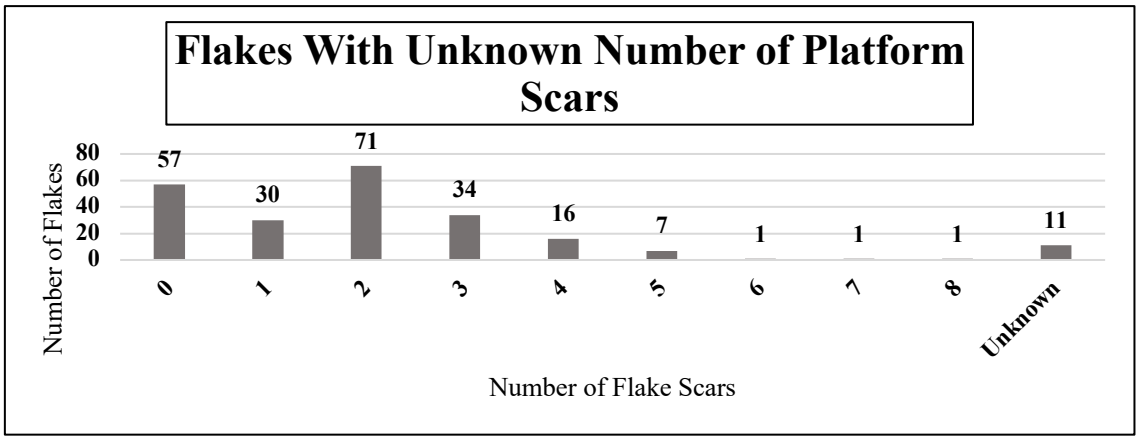



**Figure 4.26 – Area 11 flakes with unknown number of platform scars**

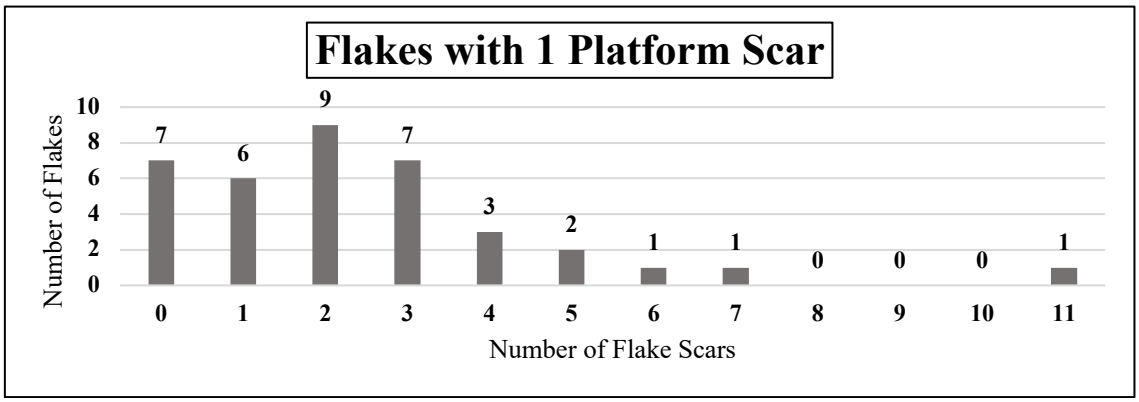



**Figure 4.27 – Area 11 flakes with one platform scar**

When analysing each material separately, one can see that most chert specimens, regardless of platform scars, tend to have a larger number of flake scars present (Figure 4.28). This is significant as it shows that chert materials were being resharpened and reshaped multiple times; they were using the chert as long as they could. This is compared to the rest of the materials that mainly have two flake scars present. Figure 4.28 contains the information for flakes with unknown platform scars. The remaining categories for chert are as follows: there were two flakes with zero platform scars (one

with zero flake scars and one with two flake scars), two flakes with one platform scar (one with 11 flake scars and one with three flake scars), one flake with two platform scars (twelve flake scars), and one flake with three platform scars (three flake scars). Figures 4.29 and 4.30 contain the information for quartzite flakes with both unknown platform scars and one platform scar. The remaining categories for quartzite are as follows: one flake with zero platform scars (three flake scars), four flakes with two platform scars (one with one flake scar, one with three flake scars, and two with four flake scars), and one flake with three platform scars (three flake scars). There were two slate flakes with one platform scar (one with two flake scars and one with four flake scars). There were also four quartz flakes with unknown numbers of platform scars (one with three flake scars, two with an unknown amount of flake scars, and two with zero flake scars.

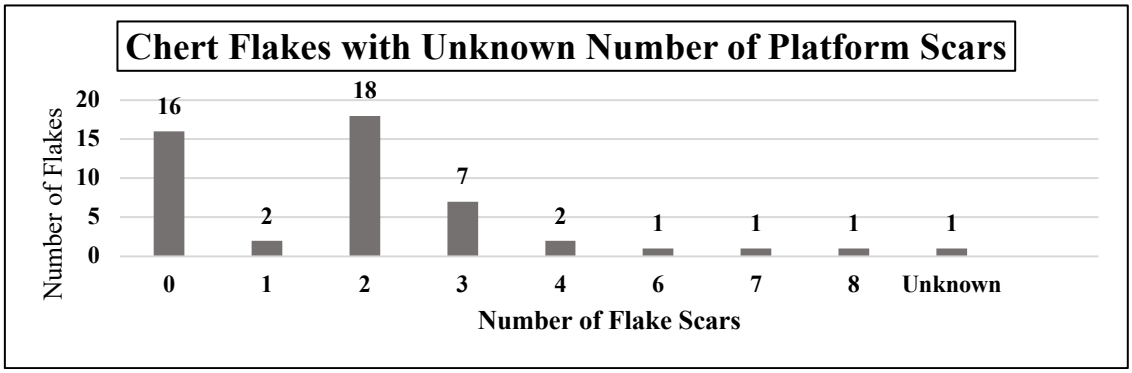



**Figure 4.28 – Chert flakes with unknown number of platform scars**

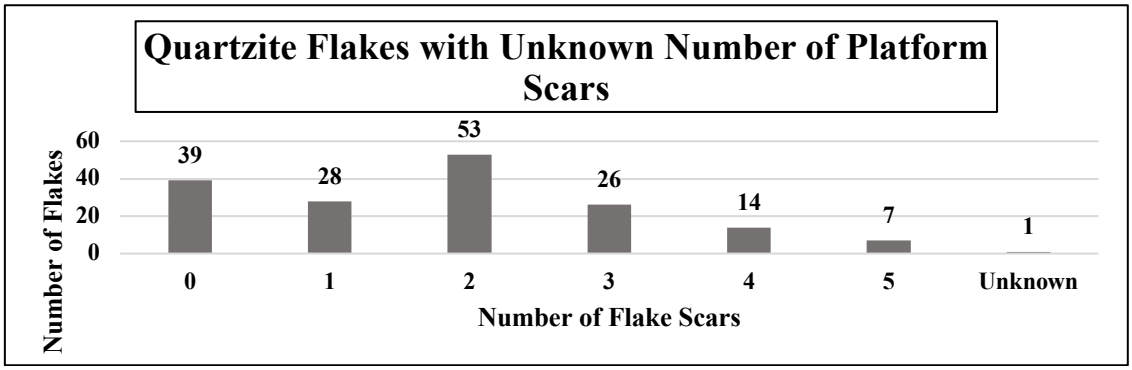



**Figure 4.29 – Quartzite flakes with unknown number of platform scars**

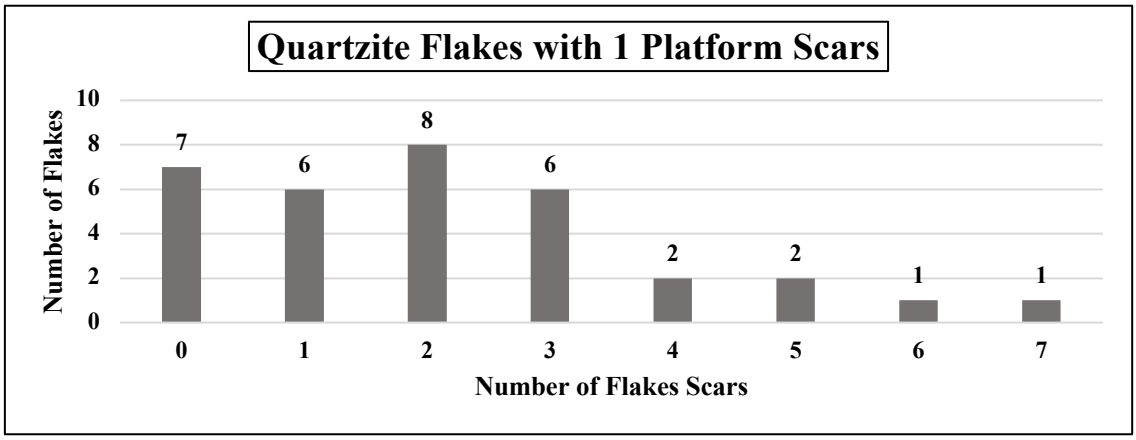



**Figure 4.30– Quartzite flakes with one platform scar**

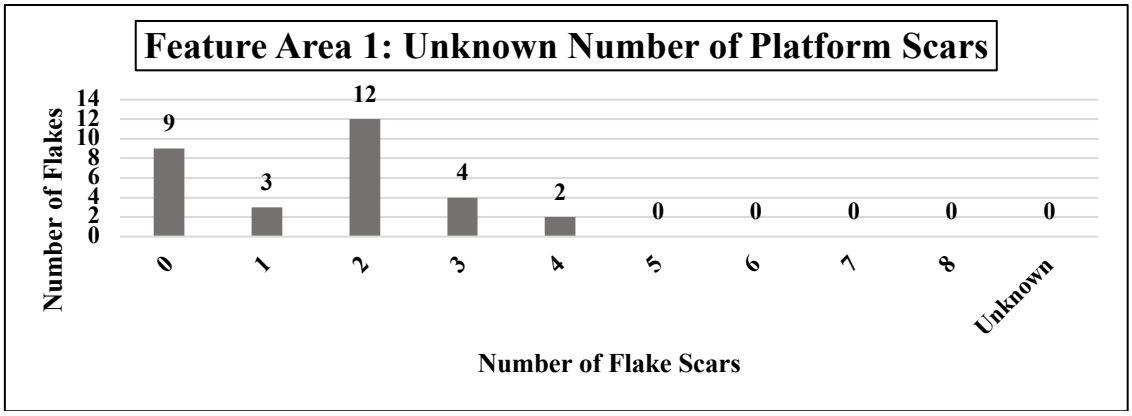



**Figure 4.31 – Feature Area 1 unknown number of platform scars**

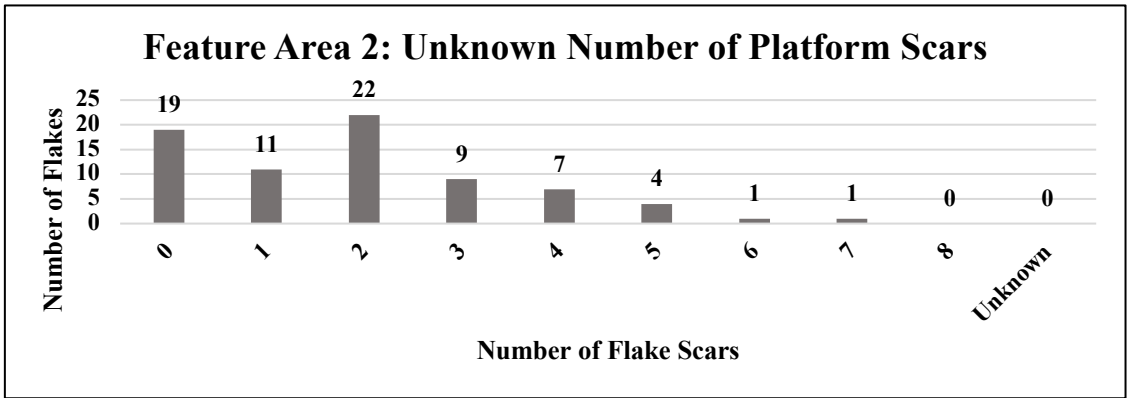



**Figure 4.32 – Feature Area 2 unknown number of platform scars**

Flake shatter was also analyzed based on the portion present; either proximal, medial, distal, unknown, or N/A. There are 594 pieces of flake shatter present in the Area

11 stone assemblage. There are 35 proximal flakes (these specimens only had partial platforms and are therefore considered as flake shatter and not flakes, as they would be classified as if they had a complete platform), 58 medial flakes, 66 distal flakes, 56 unknown, and 377 N/A (Figures 4.33, 4.34, and 4.35).

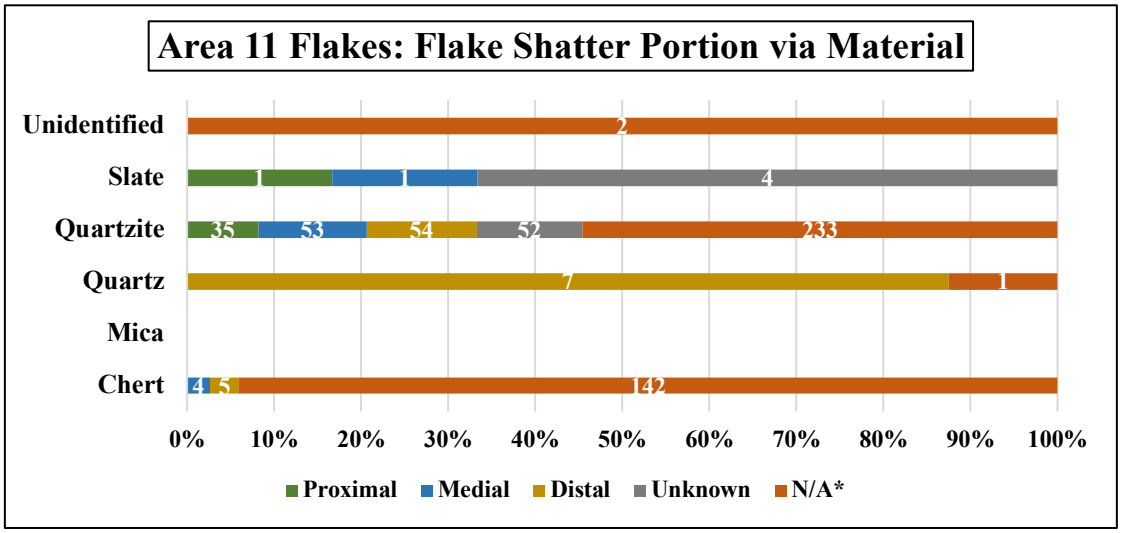



**Figure 4.33 – Area 11 flake shatter portion via material** (*N/A means the artifact was found within a quad bag)

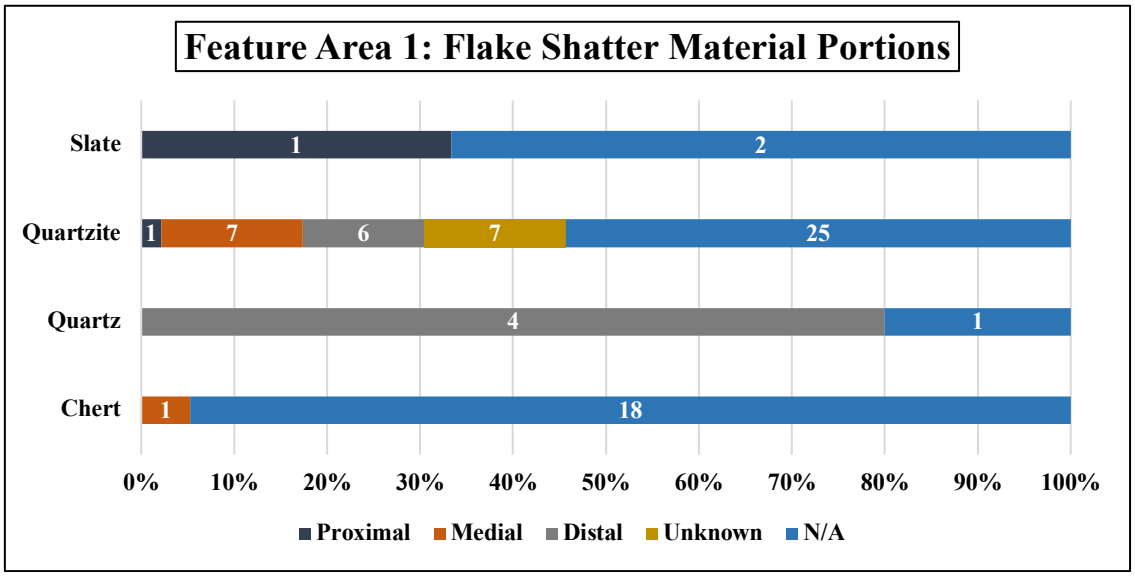



**Figure 4.34 – Feature Area 1 flake shatter material portions**

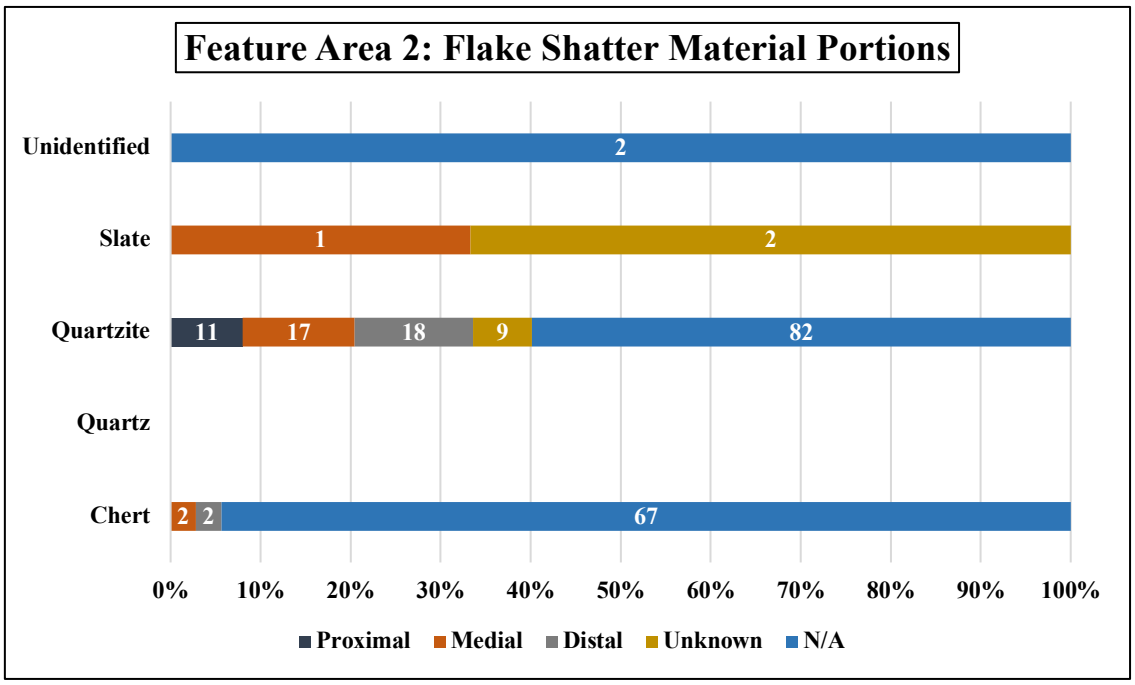



**Figure 4.35 – Feature Area 2 flake shatter material portions**

*Cortex*

Cortex is the outer surface of raw stone materials, which has been altered by chemical or mechanical means (Andrefsky 1998). The amount of cortex left on the dorsal surface is used as an indication of reduction stages. Of the 1046 stone artifacts within Area 11, 85.8% (n=897) have a cortex score of zero, 4.7% (n=49) have a score of one, 4.3% (n=45) have a score of two, and 5.2% (n=55) have a score of three (Figure 4.36).

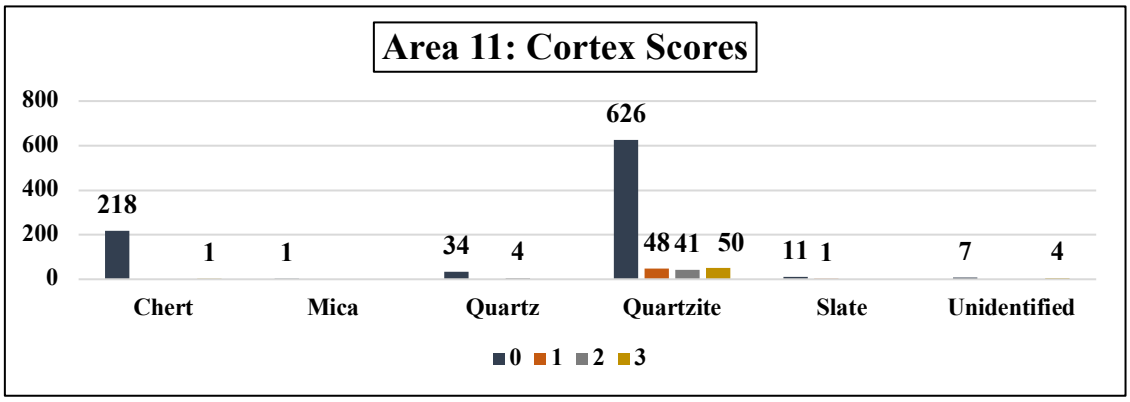



**Figure 4.36 – Area 11 cortex scores**

For Feature Area 1, 87.7 % (n=127) pieces of stone material have a cortex score of zero, 0.68% (n=1) piece has a score of one, 4.1% (n=6) pieces of material have a score of two, and 7.5% (n=11) have a cortex score of three (Figure 4.37). For Feature Area 2 there are a total of 380 stone artifacts, 84.7% (n=322) pieces of material had a cortex score of zero, 5.0% (n=19) pieces had a score of one, 4.2% (n=16) had a score of two, and 5.8% (n=22) had a score of three (Figure 4.38).

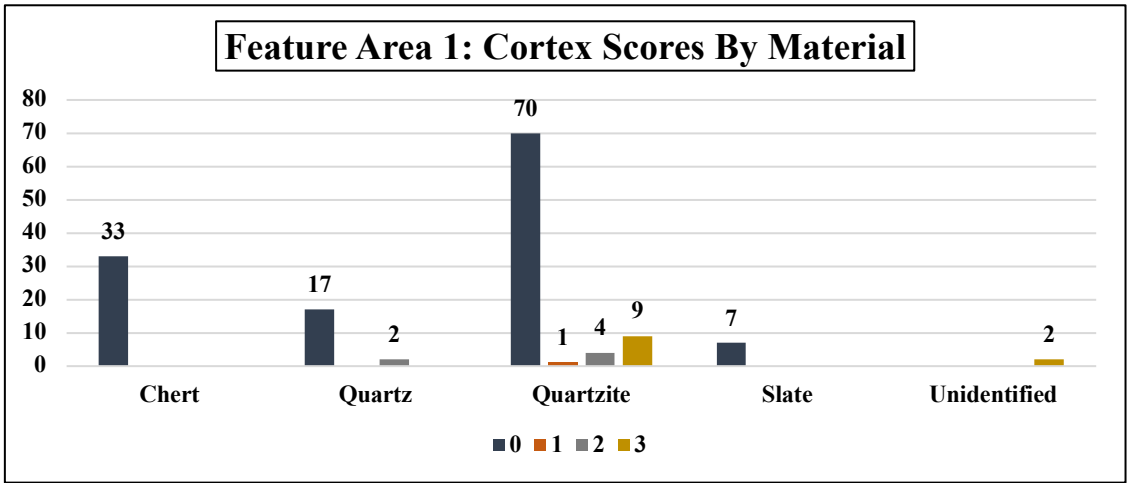



**Figure 4.37 – Feature Area 1 cortex scores by material**

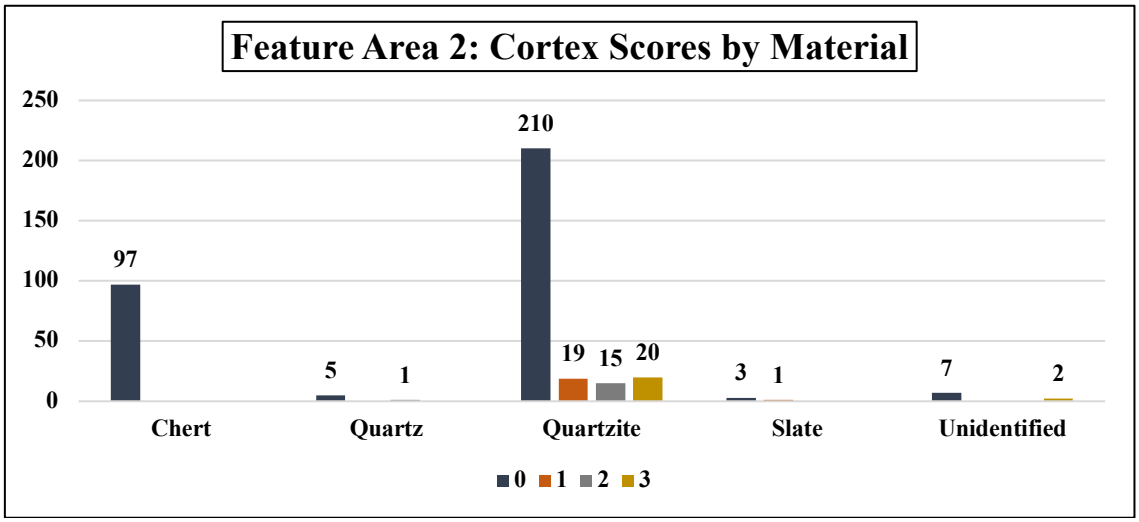



**Figure 4.38 – Feature Area 2 cortex scores by material**

*Discussion*

When analysing the debitage present within Area 11, we see quartzite dominating the assemblage. Quartzite was again the most abundant raw material in terms of weight, which is likely due to the manufacturing processes performed on the material as well as being locally available. The primary and secondary flakes are usually larger and heavier than subsequent flakes as these flakes are some of the first to come off a cobble when shaping it into a stone tool. So, with cobbles of quartzite being worked within Area 11, it makes sense that the highest amount of weight comes from quartzite. This also shows that the other materials were brought to site in smaller quantities, as well as in their final tool form or nearly final form. As an example, the chert weight is low but there were 135 pieces of chert that were too light to be weighed with the scale being utilized. The lack of cortex on chert specimens further supports this argument and shows that chert artifacts were being brought to the site in preform or tool form (Figure 4.36).

The results show that quartzite had the highest number of flakes, flake shatter, and shatter in general. Again, this is the result of quartzite being an easily exploited local material, as well as the full range of processing being completed with quartzite. The chert results suggest the material was brought to site in either complete or near complete form and the flake and flake shatter represent reshaping and resharpening. The results for the other materials (mica, quartz, slate, and unidentified) suggest these materials were brought to the area from elsewhere and were not heavily used within Area 11.

When discussing the cortex scores in association with cores, one is unable to discern how many cores were associated with Area 11. The number of flakes produced per core is highly variable and depends on many factors such as size, manufacturing

technique, degree of reduction/manufacturing intensity (Dibble et al. 2005). In the future, refit analysis, alongside cortex scores, would provide a better picture of how many cores were used. It would also provide an opportunity for a better understanding of reduction sequences used in the Intermediate period.

The cortex scores in terms of the amount of cortex on each specimen, allowed for inferences regarding stage of manufacture. The stone artifacts with a cortex score of zero represent the middle and late stages of the reduction sequence such a shaping, thinning, finishing, and resharpening. 99.5% of all chert materials within Area 11 had a cortex score of zero, which reinforces the point that this material was brought to the site either fully or mostly complete (see Figure 4.36). This is also seen with mica, slate, and unidentified material types; they manifest with mostly zero scores. The stone artifacts with a score of one represent the middle stages of the reduction sequence of shaping and thinning. The stone artifacts with a score of two and three are within the early stages of the reduction sequence where flakes are being taken off cores and blanks. These scores were mostly seen with quartzite material. Quartzite manifested in all cortex score categories, while chert did not.

**4.4 Residue Analysis**

Residue analysis consisting of both protein and starch/phytoliths residue was completed on five anvil stones (catalogue numbers 6451, 6452, 6453, 6454, and 6455) from FjCa-51 Area 11 (Figure 4.39) Two of the anvil stones came from Feature Area 1 (6451 and 6455), two from Feature Area 2 (6452 and 6453), and the last anvil stone (#6454) was recovered from between Feature Areas 1 and 2. Of the five anvil stones, only one (6455) presented with protein residue results, which was a very weak positive

reaction to bison antiserum. All five of the anvil stones had traces of phytoliths present within the samples submitted.


**Figure 4.39 – Anvil stone #6454**

The cool season grass phytoliths present were placed into the following categories: festucoid (rondel and trapeziform pooidae), saddle chloridoideae, panicoid (bilobate panicoideae and polylobate panicoideae), bulliform (bulliform cuneiform and bulliform rectangular), elongate (elongate smooth poaceae and cyperaceae and elongate spiny), trichome poaceae and cyperaceae, dicots (dicot bulky and parallelepiped), fiber, starch lenticular, and diatom sponge (diatom centric, diatom pennate, sphereaster, and sponge spicule).

The sample from anvil stone 6451 contained 38.4% (n=218) of identified phytoliths, sample 6452 contained 18.7% (n=106), sample 6453 contained 9.0% (n=51) including the lenticular starch, sample 6454 contained 17.8% (n=101), and sample 6455

contained 16.0% (n=91) identified phytoliths. See Figure 4.40 for a full breakdown of the phytolith results.

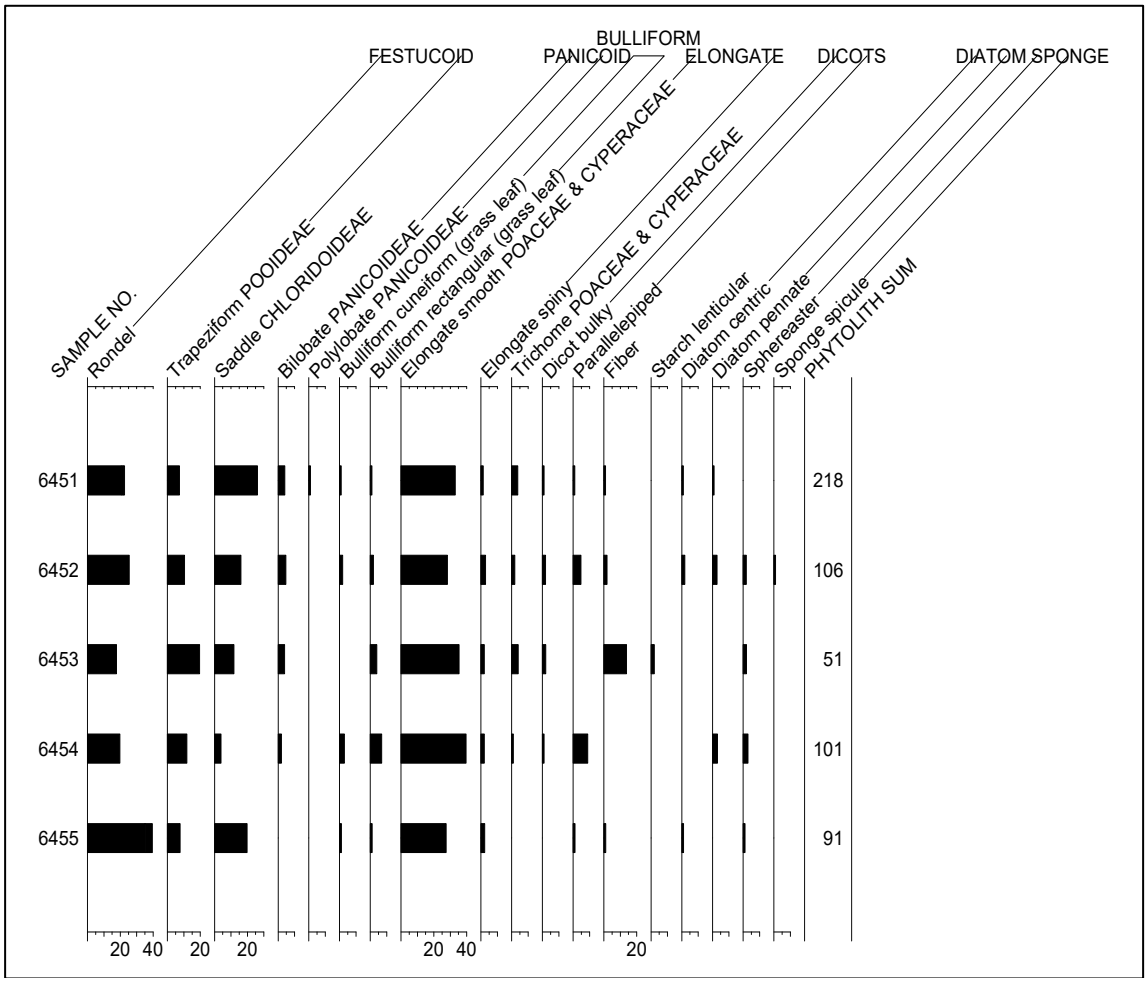



**Figure 4.40 – Phytoliths recovered from Area 11 (Scott-Cummings and Varney 2020)**

*Discussion*

The results presented above create exciting prospects for the future of residue analysis on Intermediate period artifacts. They have demonstrated, despite a small sample size, that residues can be extracted from the artifacts and processed to create useable data. Hopefully this will inspire future Intermediate period researchers to try and better understand organic materials used within sites, and to create a database of organic

residue. From the grass phytoliths detected, it appears that the short-term habitation site was occupied during the cool seasons of spring (March, April, and May) and fall (September, October, and November). The presence of a very weak positive to bison anti-serum raises questions regarding how the bison residue made its way onto the anvil stone. There are no bison in Labrador today and there is no evidence that they were present during the Intermediate period. It is possible that bison could have been acquired through trade and brought to the site in the form of preserved meat, bones, and/or skins – either as raw materials or as components of objects such as tools, shelters or clothing. Further discussion on both the phytoliths and the very weak bison positive are found in the conclusion.

**4.5 Samples**

There are four different types of samples collected from Area 11: decayed wood, charcoal, red ochre, and unidentified samples (Figure 4.41). Wood was used for multiple purposes such as building structures, tool components, and for fires in combustion features. The small amount of wood recovered from Area 11 is not surprising as organic material preservation at the site is minimal. Charcoal samples were collected from both combustion features within Area 11 and sent for radiocarbon dating. Feature Area 1 is dated to 3310 ± 30 years BP, or 1680 to 1510 B.C, (Beta-371322) while Feature Area 2 is dated to 3160 ± 30 years BP, or 1500 to 1400 B.C., (Beta – 371321). Red ochre, of which multiple nodules were collected within Area 11, was widely used by precontact groups within Hamilton Inlet, especially within the Brinex Complex (Fitzhugh 1972). Red ochre could have been used as a component in adhesive to secure stone tools to handles, and could also have been used ceremonially and for aesthetic reasons. As for the two

unknown samples, one was yellow and taken from a mortar stone suggesting potential organic material processing. The other unknown sample could be disintegrated organic or inorganic material. Unfortunately, there is not enough of either sample to come to a definitive answer as to what they represent.

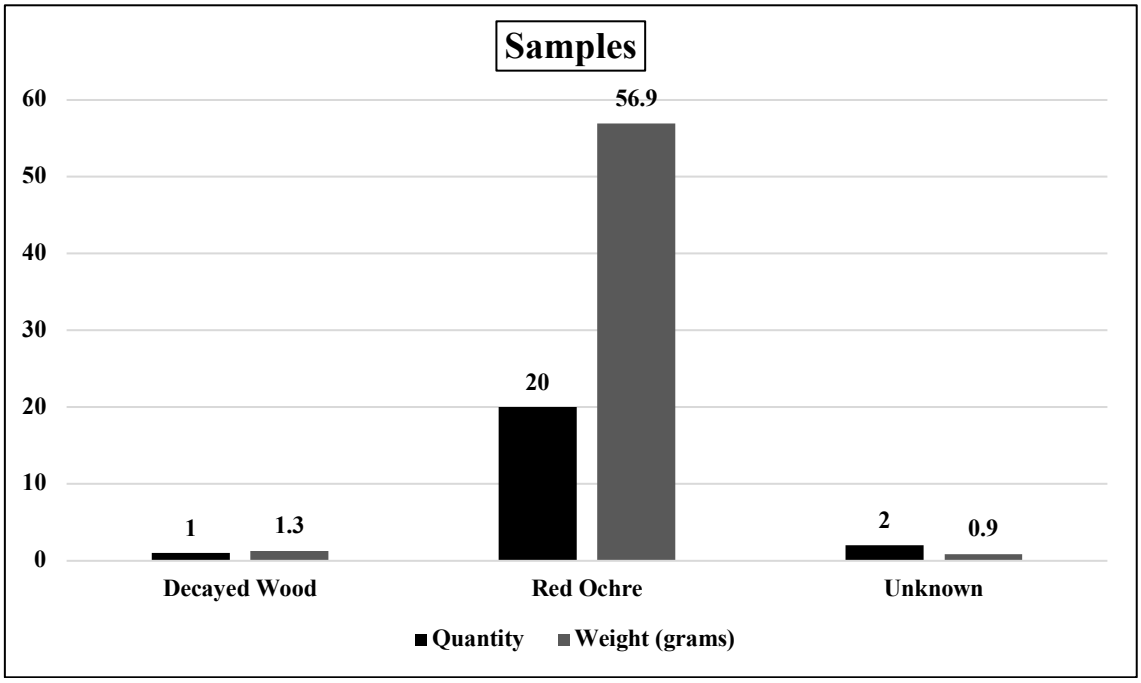



**Figure 4.41 – Samples recovered from Area 11**

*Sample Scatters by Unit*

Red ochre, decayed wood, and the unknown samples were recovered from ten units, eight of which are associated with Feature Area 1 and Feature Area 2 (Figure 4.42). The prevalence of red ochre around the features could suggest that it was being used as an additive in adhesive for the stone tools, which were also being manufactured within the same area. The decayed wood was recovered from an area between both feature areas suggesting it could be associated with a structure that may have encompassed both features. One unknown sample was found in association with Feature Area 2, while the

other unknown sample was found in association with both Feature Areas. If they are crushed organic samples this could indicate organic processing activities within Feature Area 2. One of the samples (#6357) is associated with unit N35 E32 where both a pestle (#6378) and anvil stone (#6451) were also retrieved. All these artifacts/samples in association with each other, in a small area, create a picture of an activity area where organic material was being processed.

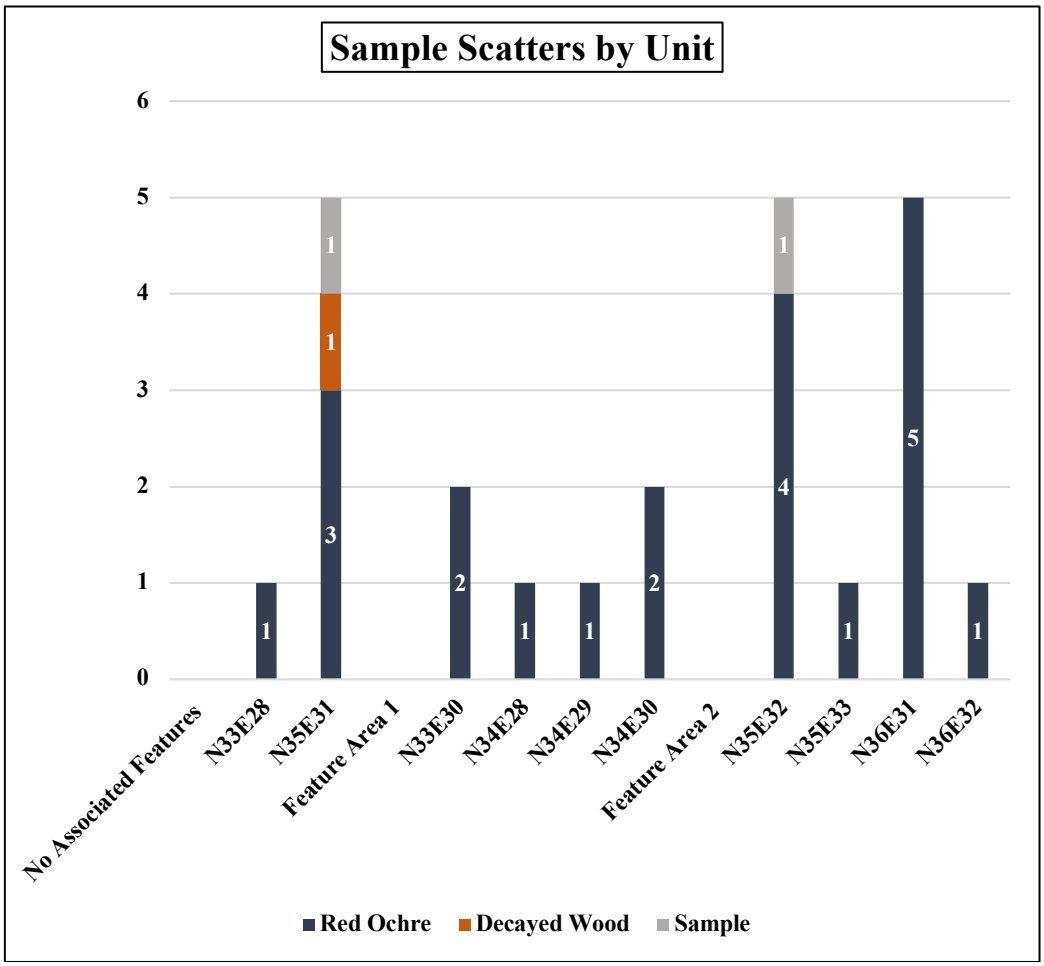



**Figure 4.42 – Sample scatter by unit**

*Discussion*

The samples collected from Area 11 allow for dates to be associated with both Feature Area 1 and Feature Area 2 based upon both radiocarbon dates and the use of red

ochre. Feature Area 1 and Feature Area 2 are also where eight of the ten samples were collected. This provides further evidence that these two areas were the main hubs of activity for Area 11 during the short occupation. The decayed wood could be evidence for the structure that was likely present, but this cannot be firmly demonstrated. The unknown samples recovered may provide additional organic material information; however, analysis of these other samples was beyond the scope of the present research. Nevertheless, I do hope future researchers are able to analyse these samples and provide additional information on them. Further discussion of the samples and their relation to the rest of the assemblage are found in the conclusion below.

**4.6 Summary**

Based on the data recorded and analyzed I have concluded that Area 11 was a short-term habitation site. Below I make the argument that Feature Area 1 and Feature Area 2 are contemporaneous and were used at the same time. I have reached this conclusion based on the artifact distribution, the types of artifacts, the raw materials used and their proximity to one another; and the lack of any discontinuity between the two feature areas. While the two radiocarbon dates for each feature area do not overlap, the gap between their ranges is only ten years, which is close enough to argue that the areas are contemporaneous. The minimal age difference could be a product of the "old wood" problem. The "old wood" problem, as it pertains to archaeology, is based on variability in the conditions and rates of wood decay (Schiffer 1986). Factors that lead to decay include moisture, fungi, bacteria, and insects. The decay factors combined with using wood for construction and fuel lead to carbon dates being returned that do not match the period of use. The dates, usually based upon small pieces of burnt wood from a hearth,

pinpoint when the tree died not when it was burnt. A piece of wood could have been scavenged from an old structure, driftwood on a beach, or a standing dead tree, and placed into the fire providing the date of when the tree died as opposed to when the fire was built (Schiffer 1986). There is also the possible issue of driftwood being introduced and used on the site. As driftwood is brought to sites via various waterways, it introduces further complications in the context of radiocarbon dating. The most common driftwood cycle starts when trees fall into a river (usually due to bank erosion). They gather in sandbars or low shores in the summer months. The trees are then freed by the spring melt and are transported to the ocean, where they are then at the mercy of ocean currents, storm surges and wind (Alix 2005; Hellam et al. 2017). Due to this cycle, the wood collected along the shores of waterways could be older than the site and can provide inaccurate dates of occupation.

*Feature Area 1*

Feature Area 1 is dated to 3310 ± 30 years BP (Beta-371322) in conventional radiocarbon years, or 1680 to 1519 Cal BC. This feature area contains a roughly circular hearth, which is typical of the time period (Figure 2.4). Some of the cobbles within the hearth were quartzite, a locally available material. There are only 151 artifacts associated with this feature, which lends credibility to the notion that this was a short-term habitation site. Of the 32 pieces of chert recovered within Feature Area 1, one was a uniface (artifact #6257) and the other 31 were either small flakes or shatter and had an average weight of 0.61 grams for all 32 pieces. The colours for the chert material were either moderate red, pale red, blackish red, moderate orange pink, pale reddish brown, greyish red and relate to tools of the same colours that were recovered from the site (see Appendix A). Each colour

could signify a different piece of worked chert, or some could be from a single piece with multiple colours present within it. The uniface was moderate red and there were flakes and pieces of flake shatter in the same colour, possibly relating to a single reshaping/resharpening event for the uniface within the Feature Area.

There are 82 artifacts made of quartzite within Feature Area 1. Of these 82, 6 are tools - 3 are utilized flakes, and 1 is a biface. There appear to be at least seven different sources based on the general colours of the artifacts: greys, browns, white, red, and purple. The other colours represent locally sourced materials that were procured from glacial till. As for the types of flakes, there was one utilized primary decortication flake in association with red ochre, seven primary decortication flakes (pale yellowish brown, greyish brown, moderate brown, and brownish grey) potentially from four different quartzite sources, 21 flakes (pale yellowish brown, greyish brown, greyish purple, moderate brown, and brownish grey), 46 pieces of flake shatter (brownish grey, greyish red, dark yellowish brown, light brownish grey, light olive grey, pale brown, and pale yellowish brown), and 11 pieces of shatter (brownish grey, brownish grey and pale yellowish brown, greyish red, dark yellowish brown, light brownish grey, pale yellowish brown, and dark reddish brown). The colours we are seeing for quartzite material here represent a few locally sourced quartzite cobbles that were then worked to produce expedient tools in the form of flakes. There was one formal tool in the form of a uniface and the rest were opportunistic tools created for use within this area. The variations of browns and greys could represent a difference of colour within a single cobble or two separate cobbles.

There are 19 pieces of quartz associated with Feature Area 1, with one specimen being a possible translucent quartz microblade. The rest of the 18 pieces are of similar colour and are flakes, flake shatter, and shatter. The smallest pieces of the material weigh under a gram and the largest was a piece of shatter weighing 61.9 grams. I believe the quartz present encompasses two separate sources of quartz, with material brought to the site and eventually discarded.

There are seven pieces of slate consisting of one flake, three pieces of flake shatter, and three pieces of shatter. I hypothesize that the seven pieces represent one episode of manufacturing a tool out of slate. One piece of slate excavated from unit N35 E29 does have some cortex present and is wedged shaped with evidence of crushing as well. There is the potential that this one wedge shaped piece was a tool that was used briefly within the area before being discarded. Furthermore, slate is a material that is used with ground stone manufacturing. While ground stone tools are not usually associated with the Intermediate period, a ground stone gouge was recovered from FjCa-51, Area 15 (Scott Neilsen, personal communication 2020).

There are five artifacts of unidentified material. First there is a cobble, calcite or slate, with solid light grey colouring mixed with darker grey, red, and green. This cobble has red ochre staining on the surface and there are areas of noticeable abrasion and pitting. The pestle of unidentified material has usewear present on one end and has red ochre staining on the surface. There was also one residue sample taken from the mortar stone, but this has not been identified. The two anvil stones within this area are of unidentified material.

As for the anvil stones, we know the anvil stone catalogued as 6455 tested positive for a very weak signature of bison residue. If this weak positive is accurate, it would suggest the stone was used to process bison at the site. The bison material could have been present in or on an artifact brought to the site, or as bison skin, hide, or bone that was utilized at the site. While it is unlikely that bison were present within the area, if this residue identification is in fact correct, this could suggest a trade and exchange network within the Intermediate period with other groups who have access to bison. There is evidence from the Intermediate period of Early and Middle Woodland artifacts, such as a notched biface and ceramics, which would suggest contact with groups from further south and west of Labrador (SSLP 2019a). Therefore, it would not be far-fetched to state that bison products could have been traded into Labrador and utilized. Though, as this is the only evidence, and the signature is a very weak one, this notion will remain speculative for the time being.

As for the phytoliths analysed, the results provided valuable information on the seasonality of when the site was inhabited based upon what grasses were present on the anvil stones. The site could have been inhabited in either the spring or fall, when cool season grasses are present. Having the phytoliths present, and evidence of pitting, on the surface of the anvil stones also points to the anvil stones being used as grinding surfaces for organic materials. The anvils may have also been used for percussive manufacture of raw stone material within and around Feature Area 1. While these are only the results of one set of residue analyses, future analyses of other Intermediate period stone artifacts may be able either to validate or disprove the results presented here.

I do not interpret this area as a dedicated working space. Instead, it seems as though the stone was worked close to the combustion feature. This could also suggest that the feature area represents the inside of a living structure where all stone material was placed into the hearth instead of spread over the floor surface.

*Feature Area 2*

Feature Area 2 is dated to 3160+30 years BP, or 1500 to 1000 Cal BC, (Beta-371321) in conventional radiocarbon age. The combustion feature encompasses five one metre units and is an ovoid shape (see Figure 2.5). This is markedly different from the combustion feature in Feature Area 1. Feature Area 2 also had substantially more artifacts associated with it at 386.

Of these 386 artifacts, 97 are made from chert material, 17 are flakes, 71 are pieces of flake shatter, one is a point base, one is a scraper, four are pieces of shatter, and three pieces are utilized flake shatter. There are 15 different colours associated with the 97 pieces of chert. These colours include blackish red, brownish black, dark reddish brown, dark yellowish brown, dusky red, greyish orange pink, greyish purple, greyish red, medium bluish grey, moderate pink, moderate red, moderate yellow brown, pale brown, pale red, and pale yellowish brown. These 15 different colours do not represent 15 different chert sources/cobbles. Upon visual inspection, one can see that some of the artifacts present with multiple colours. This means that one cobble of chert could have multiple colours. It appears that there were at least three separate bedrock, cobble, or landscape sources that produced greyish orange pink artifacts (flakes, flake shatter, shatter, and utilized flakes), another source for red coloured artifacts (flakes, flake shatter, and a point base), and another source for the brown coloured artifacts (flake shatter,

scraper, shatter, and utilized flakes). The different hues of these three main colours could represent other sources or, as I believe, variation within each of the three main sources.

There are 262 artifacts made from quartzite material: one biface, one biface fragment, two cores, 64 flakes, 137 pieces of flake shatter, one hammerstone, two pebbles, one preform, one scraper, 40 pieces of shatter, nine utilized flakes, and one piece of utilized flake shatter. I conclude there are at least four separate sources for the quartzite shatter; brown (biface, biface fragment, cores, flakes, flake shatter, hammerstone, pebble, preform, scraper, shatter, utilized flake, utilized flake shatter, and woodworking tool), grey (flakes, flake shatter, shatter, utilized flakes, pebble), pink (flakes), and red (flake shatter, shatter). The variations within the main colour categories can be attributed to multiple colours in one bedrock, cobble, or landscape source.

There are four artifacts made from quartz, four made from slate, and eight artifacts made from unidentified material. For the four quartz artifacts, two are shatter and two are biface fragments, and the colours are very light grey, white, and dark yellowish brown. I believe these represent three different sources (be it bedrock, cobble, or landscape) for the quartz. As for the slate, three are pieces of flake shatter and one is a piece of shatter. There are two distinct colours for the slate which leads me to conclude that there were at least two separate sources for the very pale orange pieces and the dark yellowish-brown sources. As for the unidentified materials, these include a pebble, two anvil stones, two pieces of medium dark grey coloured flake shatter, one pestle fragment of mixed colours, and four pieces of shatter that are coloured white, grey with green, grey, and moderate orange pink.

*Comparison of Feature Area 1 and Feature Area 2*

For the chert material, there are a few colours that are found in both feature areas. These colours are moderate red, pale red, blackish red, and greyish red. It is interesting that the colours of chert that are present in both feature areas are all a shade of red. Within Feature Area 1 these colours of chert are seen in the form of one uniface (moderate red), five flakes, 14 pieces of flake shatter, and one piece of shatter. Within Feature Area 2 these chert colours are 23 pieces of micro debitage in the form of flake shatter and three micro flakes. If, as I stated, both features are contemporaneous, the above evidence of red chert in both areas in the form of a tool and micro debitage can be used to argue that red chert was being worked in both areas and that the micro debitage is evidence of resharpening and reshaping the tool.

There was plenty of quartzite in both feature areas and the colours that are seen in both are: pale yellowish brown, greyish brown, greyish red, dark yellowish brown, light brownish grey, light olive grey, and pale brown. Within Feature Area 1 these quartzite colours are seen in the forms of one biface (pale yellowish brown), 15 flakes (pale yellowish brown, greyish brown, and dark yellowish brown), 25 pieces of flake shatter (pale yellowish brown, light brownish grey, greyish red, pale brown, dark yellowish brown, and light olive grey), seven pieces of shatter (greyish red, dark yellowish brown, pale yellowish brown, and light brownish grey), and two utilized flakes (light brownish grey and pale yellowish brown).

Within Feature Area 2 these quartzite colours are seen in the form of one biface (pale yellowish brown), one biface fragment (pale yellowish brown), two cores (pale yellowish brown), 38 flakes (pale yellowish brown, pale brown, dark yellowish brown,

light olive grey, greyish brown), 73 pieces of flake shatter (pale yellowish brown, pale brown, light olive grey, greyish red), one hammerstone (pale yellowish brown), one pebble (light olive grey), one preform fragment (pale brown), one scraper (dark yellowish brown), twenty-nine pieces of shatter (pale yellowish brown, light brownish grey, pale brown, greyish red, dark yellowish brown), five utilized flakes (pale yellowish brown, dark yellowish brown, light olive grey), and one utilized flake shatter (dark yellowish brown).

### *Area 11*

When viewed as a whole, Feature Area 2 appears to have been the main activity area within Area 11, with Feature Area 1 being a secondary activity area based upon the smaller number of artifacts within Feature Area 1 as compared to Feature Area 2. Or Feature Area 1 could have also been used as another activity site that did not require the same type of opportunistic tools as the activities associated with Feature Area 2. Feature Area 2 has a large concentration of red ochre, flakes, and flake tools which are indicative of tool manufacturing and hafting. Furthermore, Feature Area 2 had all the same tools as Feature Area 1 alongside tool fragments (biface fragments and pestle fragment), which points towards Feature Area 2 being where tools were being repaired/ replaced, as well as where the broken tools were being discarded. So, this feature area could have been where the tools were created/replaced and then attached to a handle with the red ochre used in an adhesive. This could explain why there were so many nodules of red ochre in the northern part of Feature Area 2; nodules would have been crushed and mixed with other materials. At the same time, however, most Intermediate period excavations have only recorded either traces of red ochre or smears of it on artifacts (see Nagle 1978; SSLP 2019a). There

being so many nodules in such a small area may suggest the red ochre was also being used for something else that we are not able to discern. Some potential uses include as a hide tanning ingredient (Rifkin 2011), as a paint (Wolf et al. 2018), or an ingredient in insect repellent (Rifkin 2015). Red ochre has also been found in burial contexts (Fitzhugh 2006).

The pea gravel location between the two feature areas is interesting and may have been one of the reasons why this location was chosen for habitation and the activities undertaken. The pea gravel encompassed four excavation units in the middle of the feature areas, as well as south and east of them. This location did not have many large stones present, and the pea gravel was very compact and offered a solid support surface. There was a large concentration of flakes and flake shatter in unit N32E31 of the pea gravel area. I hypothesize that this area was used for stone tool production as the compact nature of the pea-gravel provided a suitable work surface for percussive manufacturing. The area is also devoid of most other artifacts, strengthening this hypothesis.

While I am unable to definitively state that Feature Area 1 and Feature Area 2 represent two living areas within a single linear structure, there is evidence to support this. The two combustion features are situated approximately two metres apart and are parallel to the beach contours and former shorelines. There is a small space between the two features where there is minimal debitage or larger stones. As well, when looking at the excavation, with the artifacts plotted, one can see two lines where there are no artifacts present, running parallel to the north and south of the features, which may present the edge of the structures (Figure 4.43).

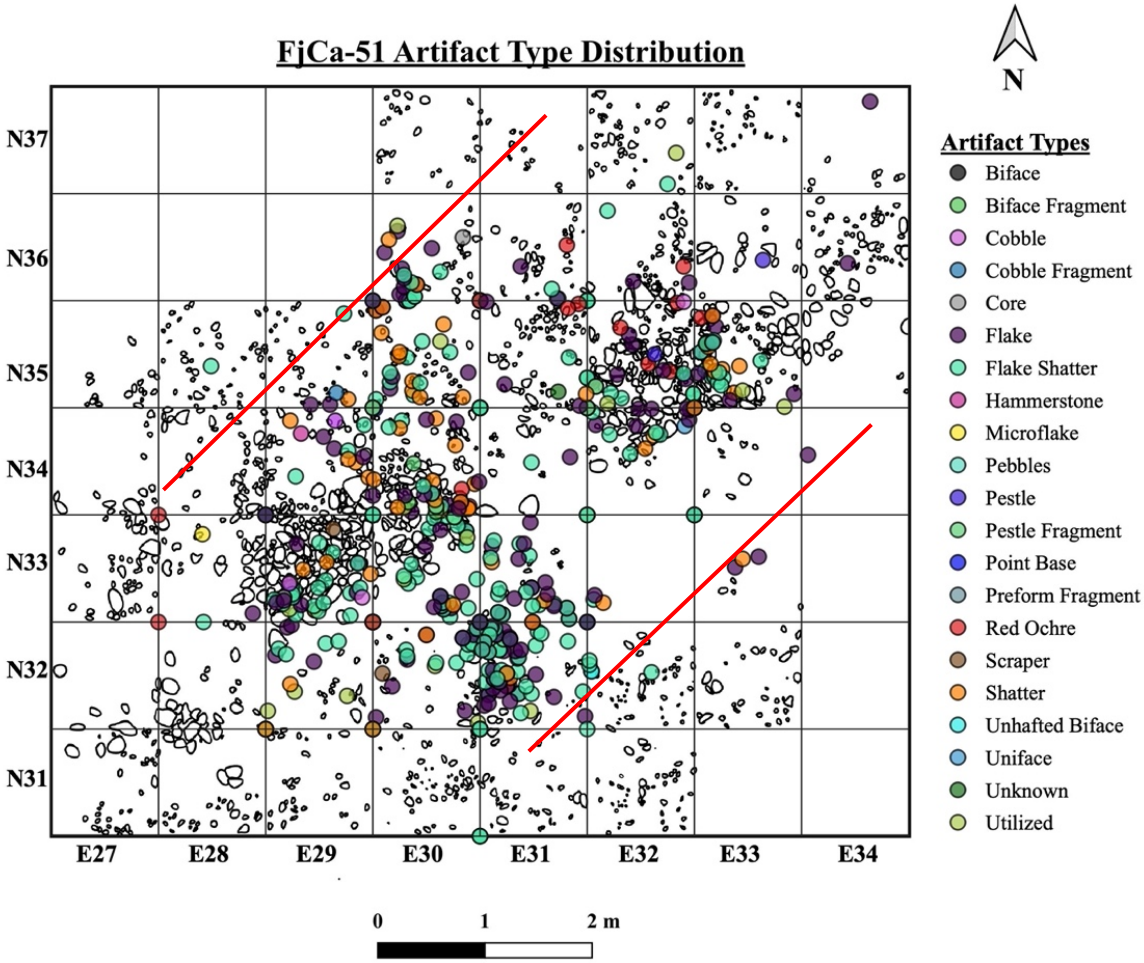



**Figure 4.43 – Artifact distribution map with parallel lines devoid of artifacts highlighted**

These structures are also parallel to the beach ridge with the activity areas to the back of the structures, which would also provide protection from the wind. These structures would have been made with organic materials such as skins, birch bark, and logs that have not survived the acidic soil of the boreal forest. Though there is one posthole within Feature Area 2, it is more likely associated with feature activities as opposed to being a structural support. The paired hearths provide further evidence in support of the Area being two living spaces within a single habitation. There has been documentation of other paired hearths within the Intermediate period. On the south side

of Muskrat Falls, several Intermediate period sites (FhCe-17, FhCe-05, FhCe-22, FhCe-24, and FhCe-25) also have paired linear hearths that are oriented at an angle towards the water, near the edge of a terrace (SSLP 2019a).

At the site of Shanapeu Ushpism, GlCt-05, there were three hearths of varying sizes aligned linearly and facing the bank of the river (Jenkinson 2010). There were also paired hearths at the coastal site of Thalia Point 5 (Nagle 1978), which resemble those in Area 11, and similar paired hearths have been recorded elsewhere at FjCa-51 (Neilsen 2010, 2013). Ethnographically, there are instances of large linear structures that are used by more than one family (Penashue 2019), or large 16-foot oblong structures with paired hearths (Ptarmigan Point-2 or GdDe-1) (Loring et al. 2003).

Due to the lack of direct structural evidence, I must also consider that these two feature areas could represent an outdoor activity area with a neighbouring structure. In this scenario Feature Area 1 would represent an indoor living space in the form of a structure. If one refers to Figure 4.44 you can see that there is minimal debitage around Feature Area 1, and there is a discernable lack of artifacts around what would have been the structure walls. The debitage within the living structure could be from reshaping and resharpening events, which would produce minimal debitage. Feature Area 2 would still be the main activity area for Area 11, it would just be outside. The evidence to support this being an outdoor area would be the abundance of debitage spread throughout Feature Area 2. Some small pieces of debitage may be seen inside structures due to a reshaping/resharpening event, however, it is unlikely one would go through the complete tool manufacturing process within a living space. The area of high activity is also on and near the pea gravel surface, which may not have been an ideal location to set up a

structure. The one post hole found near Feature Area 2 may then be associated with a pole stuck in the ground to be used as part of a tripod to place items over the fire. The stones within Feature Area 2 may have also been heated within the fire to be used as warmth within the living structure.

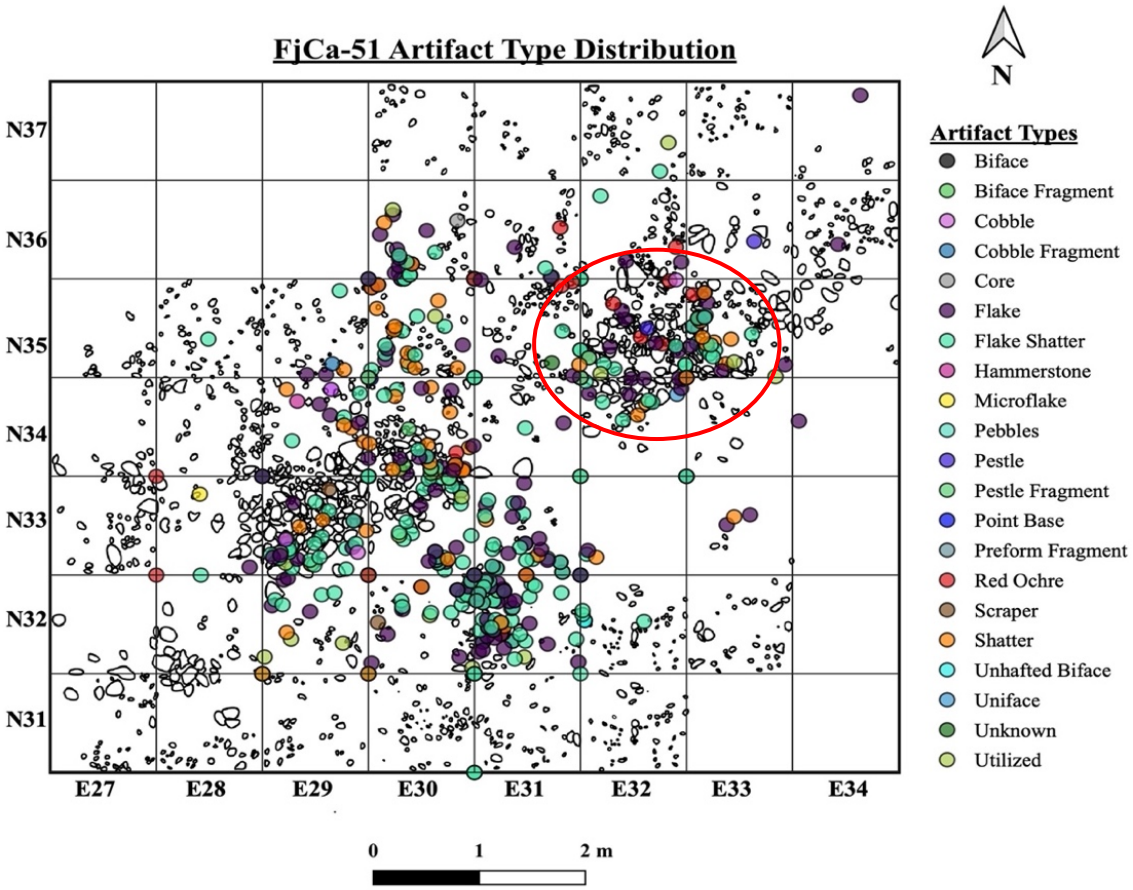



**Figure 4.44 – Feature Area 1 circled to show minimal debitage present**

Something of note is the pile of stones to the southwest of Feature Area 2. Originally this was classified as Feature 3, but I have associated the pile of stones with Feature Area 2. This pile could represent stones that were heated in the fire for warmth or cooking purposes, larger stones that were cleared from the habitation area, or stones that were meant to be heat treated for future reduction and stone tool manufacturing. Stone

piles like the one near Feature Area 2 have been documented on other sites during excavations around Muskrat Falls (SSLP 2019a), and at other locations in FjCa-51 (Neilsen 2017).

As for the excavation itself, the site may have benefitted from an extension of the excavation towards the east. The excavation stopped due to lack of artifacts within the units as well as negative test pits in the surrounding area. However, there is a possibility of features having been present outside the boundaries, which did not have artifacts associated with them and were not detected by the test pits as a result. As it is now, there are more questions than answers regarding this area. The future analysis of the adjacent excavations will require the conclusions presented here to be revisited in order to determine the relationship between Area 11 and the adjacent areas within FjCa-51.

### *Residue Analysis*

The residue analysis completed on five anvil stones from FjCa-51, Area 11, produced results that were unexpected and surprising. I did not think bison would have been used during this time period as they are not known to have been present within the area. Based on bison habitats and movements, however, the positive residue results for bison may in fact be correct (and not the result of contamination).

Historically, bison (both prairie and woodland) had a vast range. They were in most areas not covered by ice sheets. Estimates suggest that the original range of bison in North America crossed through 22 major biomes and encompassed roughly 9.4 million square kilometres (National Park Service 2017; Rivals et al. 2007). Figure 4.45, adapted from Sanderson et al. (2008) illustrates their present range along with the potential historical range and contested range outlined in solid red and dashed red respectively. The

weak positive result of bison from the protein residue analysis signals a positive for *Bison occidentalis* (prehistoric bison), *Bison bison bison* (plains bison), *Bison athabascae* (mountain or wood bison), and/ or Bos species (cow)/ domestic bovids (Scott-Cummings and Varney 2020).

*Bison bison occidentalis* originated within northern Alaska and there are debates about using the name when discussing mid-continent bison, which causes confusion as the name is widely used (Boyle 2018; Wilson et al. 2008). There is an instance *of Bison bison occidentalis* being uncovered in Kenora, Ontario, dating to 4270±60 years B.P (McDonald and Lammers 2002). This one specimen extended the known range of the *Bison bison occidentalis* by 280 kilometres north and 65 kilometres east for the species genus within the western Great Lakes Region (McDonald and Lammers 2002). The range of Plains bison does not extend to central Labrador. Therefore, the potential for the positive result to be from this group is little to none. This then leaves either the mountain or wood bison, cow, or another domestic bovid. While there may not be any instances of *Bison bison athabascae* within Labrador thus far, this does not exclude the potential for access to bison via trading with other cultural groups during travel across the land.

Another possibility would be that the sample was contaminated either during excavation, handling, or during residue extraction. This would mean that the results are false weak positives and there was never bison protein on the anvil stone. This is possible as the anvil stone was not excavated and recorded as one normally would for residue analysis. No special precautions (wearing gloves) were taken as residue analysis was not considered at the time of collection.

Also, there was no control sample of soil from beneath the anvil stone to test against, meaning that the protein could also have been present in the soil and transferred to the anvil stone creating a false positive – although this seems unlikely given that Labrador is outside the bison range. It could also be traces of bison or bovine from the excavator's hands, or from the dogs wandering around the site (many dog treats and foods have bovine and bison in them). These scenarios could create the weak positive recorded.

One must be cautious when discussing these results as there are many factors to take into account. For future researchers in the area, or working on sites within the Intermediate period, a set of protocols could be created in relation to the collection of stone artifacts that have a potential for residue analysis. These protocols include handling the artifact as little as possible to avoid contamination, wearing sterile lab gloves while collecting the artifacts, not allowing these artifacts to be left within the excavation area exposed to the elements (i.e., aim to fully excavate and field catalogue the artifact in one session), placing artifacts directly into a plastic bag without brushing or cleaning off the dirt on the artifact, and collecting control soil samples to test against the artifact. The soil samples must be collected from around the artifact (should not touch the artifact), as well as offsite. These control samples will ensure that the positive protein residue results are not due to contamination in the soil such as bacteria or animal faeces. All these protocols are outlined by the PaleoResearch Institute (2000).

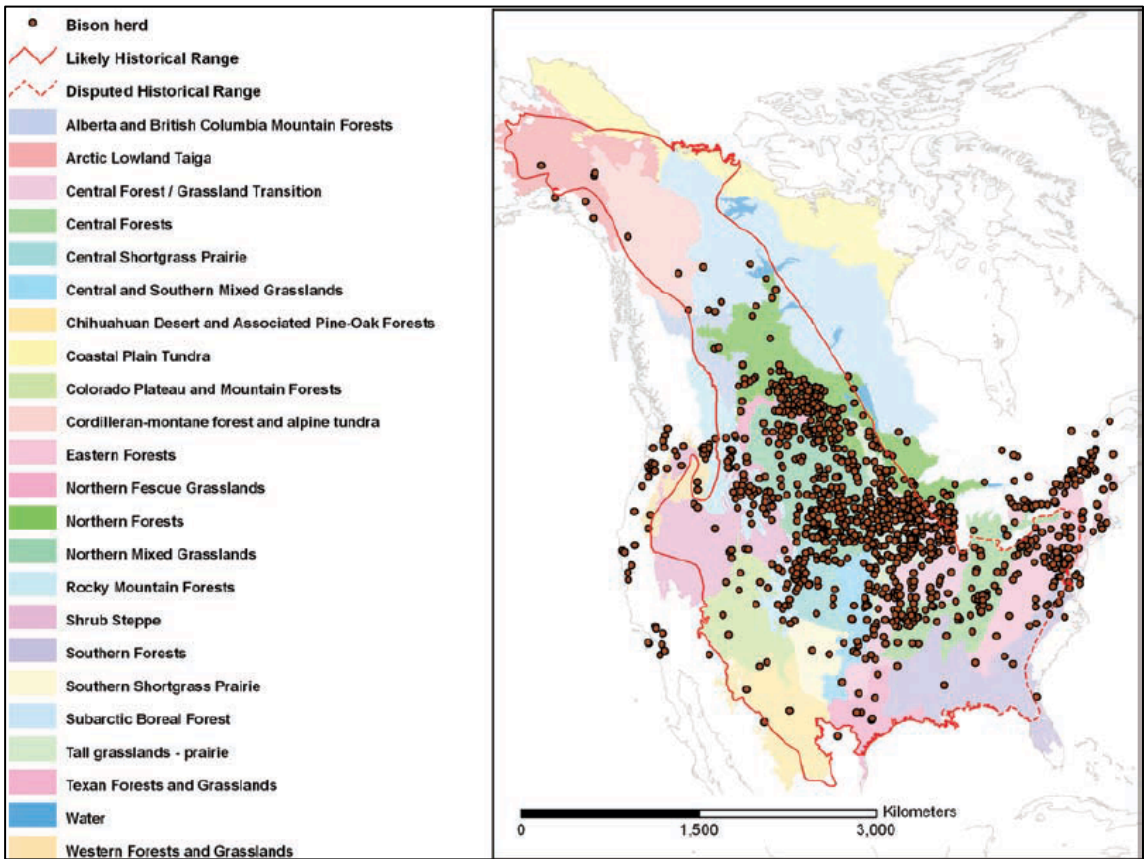



**Figure 4.45 – Bison Herd Ranges from Sanderson et al. 2008, page 256.**

## 4.7 Summary

The results presented here support the hypothesis that Area 11 was a single use, short-term habitation site within the Charles and Brinex Complexes. This conclusion is based on the tools created, the raw stone materials used for said tools, and the colour of the raw material utilized. From the concentrations of artifacts around both combustion features in Feature Area 1 and Feature Area 2, I believe these areas were within a structure and the site activities were concentrated here. While I do not believe stone tool production was the main activity at this site, there is more than enough evidence suggesting the creation of expedient tools and resharpening/reshaping of existing tools.

The red ochre present within the site as nodules could have been used in the adhesive for hafting the tools that were present on site or have had another use unrelated to hafting. As for the residue analysis, it provides evidence of possible organic material processing occurring at the site and trade. Overall, these results lay the groundwork for further hypotheses regarding site use within Area 11 and FjCa-51 as a whole.

# Chapter Five: Conclusion

FjCa-51 is an important and significant Intermediate period First Nation site, one of 185 within the province of Newfoundland and Labrador. It was excavated at the request of the Sheshatshiu Innu First Nation. Within this thesis I have analysed the assemblage of Area 11, situated approximately 19 metres above sea level, to comprehend how to the site was used and what analyses can be implemented in the future to provide additional information. What I have come to understand about Area 11 is that it was inhabited briefly within the cool spring (March, April, May) or fall (September, October, November) months, most likely as a stopping area used during a transition between coastal to interior areas. Based upon the age of Feature Area 1 (1680-1519 Cal BC, or 3310 ± 30 years BP (Beta-371322) in conventional radiocarbon age), Feature Area 2 (1500-1000 Cal BC, or 3160+30 years BP (Beta- 371321) in conventional radiocarbon age), the diagnostic artifacts, and the height above sea level, the site is situated within the Charles/Brinex (also called Saunders) complex of the Intermediate period.

The use of the chaîne opératoire, in combination with the stone analyses, proved to be invaluable in understanding the use of raw materials on site. All the stages of the chaîne opératoire were seen (procurement, formation, use, reuse, and discard). By visualizing the stages each artifact went through, I was able to create an understanding of raw material use, the inferred value of each raw material type, and the creation and use of informal versus formal tools. For example, there are chert pieces that went through the stages of procurement, formation, use, formation, reuse (with the possibility of going through formation, use, and reuse multiple times), before being discarded; the material

was being used until it was no longer viable as it was a formal tool and a higher valued material. This is juxtaposed beside certain quartzite artifacts that went through procurement, formation, and then discard; this material was easily procured and therefore expendable as expedient tools as the material had a lower value. The chaîne opératoire allowed me to see these differences more clearly which also provided a better understanding of local versus exotic materials and how they were used.

When completing stone analyses (including the analyses completed within this thesis), two basic classifications are used to: 1) recognize and record stone artifacts that are diagnostic markers of a specific culture group, and 2) to recognize and record the functionality of the artifacts, how they were used, and how this pertains to the cultural group one is analysing. These analyses were completed alongside use of the chaîne opératoire to provide a comprehensive understanding of the assemblage for Area 11. Area 11 had both diagnostic artifacts and raw materials placing the site within the combined Charles/Brinex (Saunders as it is now called) complexes. These diagnostic artifacts included scrapers, notched points, and a bifacial knife. The material utilized is also diagnostic of the time period; red and white quartzite, quartz, and chert (both fine grained and opaque). The functionality of the artifacts as informal tools allowed for inferences pertaining to the nature of the site. As informal tools are made quickly and for a general purpose, this allowed me to conclude that the site was a short-term habitation site seeing human occupation for days or weeks, as opposed to months. The anvil stones and pestles served as platforms and implements one used to process organic materials and minerals such as red ochre. Scrapers, utilized flakes, and knives were used in the preparation of hides and meats, or other organic materials, and the hammerstones were used to create

new stone tools to replace the ones that were discarded in the features. Future research on the remaining collection of FjCa-51, and the continued excavation of the larger site, may require revisiting these conclusions.

When I set out to complete this research, I had six questions I wanted to answer:

1) How were the artifacts distributed within the site and what does this show about site use?
2) Where were the lithics sourced and what can be inferred about movement and/or trade?
3) How does FjCa-51 fit into the pre-existing history of the Intermediate period?
4) Were the anvil stones used for processing organic materials? If so, what was being processed on them?
5) Does the size of the anvil affect what materials are processed on it?
6) Should future researchers of the Intermediate period use residue analysis on the anvil stones, and what materials should they test for?

1) *How were the artifacts distributed within the site and what does this show about site use?*

The artifacts were distributed mostly around Feature Area 1 and Feature Area 2, as well as the pea gravel area that is located between the two areas. Both Feature Areas were utilized at the same time; however, activities taking place within Feature Area 2 are more visible in the archaeological record. This is because the activities of stone tool manufacturing and repair produce a substantial amount of debitage, as seen in Feature Area 2 (n= 350) versus Feature Area 1 debitage (n=135). There is also a cross-over in the

raw materials utilized in both feature areas and their colours. For quartzite, the colours found in both feature areas are pale yellowish brown, greyish brown, greyish red, dark yellowish brown, light brownish grey, light olive grey, and pale brown. For chert, the colours found in both feature areas are moderate red, pale blackish red, and greyish red. My interpretation indicates that the artifact distribution shows a small working area for the manufacture of informal tools (not many formal tools were present) within the pea gravel area. This area is where most of the pieces of flake shatter were located, and flake shatter is an indication of tool making or a high traffic area within the habitation site. As an example, there were more informal tools such as utilized flakes as opposed to complete knives. Feature Area 2 also showed informal tool production as well as possible hafting of the artifacts due to the presence of multiple nodules of red ochre, not just in powder form.

The site presents as a short-term habitation area (short-term meaning days to weeks, as opposed to months). As was discussed in chapter four, I am stating that Feature Area 1 and Feature Area 2 were both within a structure. Feature Area 2 also has a pile of stones situated close by that were either heated for warmth or were potentially used for cooking purposes. When taking the residue results into account, one can propose that the site was inhabited during either Spring (March, April, May) or Fall (September, October, November) due to the phytoliths present (Figure 4.36). Therefore, my current interpretation of Area 11 is that it was a short-term habitation site with a structure surrounding both hearth features. However, future analysis of all FjCa-51 assemblages is needed to understand Area 11 within the context of FjCa-51 as a whole. Study of

neighboring excavation areas may shed additional light on the Area 11 assemblage and may require re-assessment of these conclusions.

2) *Where were the lithics sourced and what can be inferred about movement and/or trade?*

Most of the lithic material at FjCa-51 was collected locally in the form of quartzite cobbles, which is evident in the sheer number of quartzite artifacts both small and large (n=765). One can state that the quartzite is mostly local as it manifested in multiple early-stage reduction and manufacturing forms. The evidence for this is as follows: quartzite material had cortex scores of two or three (which means cortex was still present on the artifacts); most artifacts only had around two flake scars (which means the materials were not heavily worked); the material had the highest counts of flakes, as well as pieces of flake shatter and shatter (n= 199, n=427, n=96, respectively), and the quartzite debitage weighed 1308.9 grams. These results provide evidence showing that quartzite was an expendable material as it was abundant within the area and easily accessible when needed.

This is juxtaposed with the chert material results, a non-local material, which show that the material was brought to site already having been through the early reduction and manufacturing stages. The evidence for this is as follows: 99.5% of chert material had a cortex score of zero (which means there was no cortex present on any part of the artifact); most artifacts had many flake scars (indicative of multiple reshaping and resharpening events); the material had a small number of flakes, flake shatter, and shatter (n=5, n=151, n=5, respectively); and the chert debitage weighed 8.8 grams. Quartz and

slate material show similar results to chert suggesting that these materials were also brought to site in pre-worked forms. The colourful cherts were carried to the site, or traded, from the Seal Lake region where McCaffrey et al. (1989) believe this raw material is located. This evidence found within Area 11, in the form of non-local raw materials such as the chert, helps confirm the assumption that the First Nation peoples who inhabited Area 11 either travelled around the region or had trade connections with other groups. The same goes for the small amount of quartz, slate, and mica found at the site. We do not know the source and must assume these materials were imported to site.

Trying to answer the question of where the non-local raw materials were sourced proved to be difficult. While there is speculation as to where some of the sources are located, such as the colourful chert coming from near Seal Lake, these have yet to be confirmed. However, the presence of non-local materials does provide evidence of movement across the land and potential trade with other groups that were able to easily access these sources. Without fully knowing where these raw materials sources are located, it is difficult to definitively understand the movement and trade of the materials. It is understandable that the sourcing of raw material is a timely and costly venture, however, lithic identification for each archaeological site should go beyond just a visual identification of the material to establish a better understanding of lithic choices and use within the Intermediate period. Ideally, there would be a collaboration between geologists and archaeologists.

3) *How does FjCa-51 fit into the pre-existing history of the Intermediate Period?*

Area 11 can be classified as a Charles/ Brinex complex site. Many archaeologists now bundle these two complexes together and call it the Saunders Complex, or the Saunders phase as Fitzhugh (2021) has recently suggested. I would agree with placing Area 11 into the Saunders complex as the artifacts, as well as the materials utilized, encompass both complexes (see section 4.1). Area 11 of FjCa-51 is an example of why the Charles and Brinex complexes need to be discussed as one taxonomic unit. I have concluded that the features are contemporaneous and used at the same time, while the materials within each Feature Area align with either the Charles or Brinex complex. While this is only one area within the entire FjCa-51 site, it has created additional evidence against the validity of the Charles/ Brinex complex division.

Fitzhugh and Martin (2021) also discussed the Saunders complex in some detail, though I believe further research is still needed. Fitzhugh and Martin (2021) state that there is no clear distinction between the Brinex and Charles complexes (Fitzhugh and Martin 2021). The work I completed on Area 11 of FjCa-51 is another good example of how the distinction between Brinex and Charles complexes are blurred or non-existent. Both Feature Area 1 and Feature Area 2 have diagnostic markers of Brinex and Charles complexes including scrapers, a bifacial knife, notched point, as well as the use of chert, quartzite, and quartz, and dates pertaining to the Brinex complex (3200-3000).

The analysis completed for this thesis echoes the need for further research and change in the classification of the Intermediate period as we currently understand it. The Muskrat Falls report (SSLP 2019a) also provided valuable evidence that there is a large

presence of sites within the interior of Labrador. For both the Muskrat Falls sites and FjCa-51, quartzite continued to be the main source of lithic raw material in the form of flakes, flake shatter, and shatter. Non-quartzite materials, including chert, were also seen in smaller quantities as finished artifacts or as thinning and finishing flakes at both Muskrat Falls and FjCa-52 Area 11. Some of the smaller sites within the Muskrat Falls project were also short-term habitation sites that were inhabited during the cool months of Spring and Fall, like Area 11 of FjCa-51. These short-term habitation sites were likely opportunistic sites utilized as stopping points between other areas (such as from Muskrat Falls to FjCa-51), as well as for group movements related to hunting and fishing. This also points to a mobile lifestyle where goods might have been traded over longer distances, for example the colourful Saunders cherts and possibly bison products. By combining the analysis from Muskrat Falls and Area 11 of FjCa-51, one can better understand the broad scope of the Intermediate period and the potential for extensive trade routes and interactions. These analyses are also changing the way one looks at the Intermediate period; more information is being brought to light that is changing the interpretations and broadening our understanding of the Intermediate period in Labrador.

There needs to be a re-evaluation of the current Intermediate period classification system. This has been discussed previously (Fitzhugh and Martin 2021; Neilsen 2006) but has not been implemented by all archaeologists working within the province. This re-evaluation would involve connecting coastal and inland sites by using the same classification, changing the names of time periods to those chosen by the Innu community (Arbour et al. 2018), and updating the number of time periods, as it has been suggested that there can be two designations, namely Saunders and North West River (Neilsen

2006). By doing this, the Intermediate period would be better understood as a whole, with more suitable classifications. I also believe more first-hand Innu Indigenous knowledge should be brought into the discussion on the Intermediate period in terms of how the Innu believe the sites, features and artifacts were used.

4) *Were the anvil stones used for processing organic materials? If so, what was being processed on them?*

The residue analysis results did provide answers regarding this question. All five of the anvil stones had phytoliths present, and #6455 did have a very weak positive for bison. Anvil stone #6451 had n=218 phytoliths present, #6452 had n=106, #6453 had n=51, #6454 had 101, and #6455 had n=91 along. The cool season grass phytoliths present were festucoid (rondel and trapeziform pooidae), saddle chloridoideae, panicoid (bilobate panicoideae and polylobate panicoideae), bulliform (bulliform cuneiform and bulliform rectangular), elongate (elongate smooth poaceae and cyperaceae and elongate spiny), trichome poaceae and cyperaceae, dicots (dicot bulky and parallelepiped), fiber, starch lenticular, and diatom sponge (diatom centric, diatom pennate, sphereaster, and sponge spicule). While I would like to state that these results are definitive and show organic material processing, I cannot. As the anvil stones were not collected with residue analysis in mind, there may have been contamination during the handling and cataloguing of the stones, or even during the processing of the residue. The very weak positive to bison may have been contamination from food that excavators were handling, or even from dog food as dogs often wandered through the site. The phytoliths present may have also come from vegetation at the site and during the accumulation of plant materials on top of the site over approximately 2000 years. If the phytolith results are correct, this

would show that organic material was being processed on the larger anvil stones. If the bison result is correct, this would suggest trade with other groups as bison likely never lived within Labrador. To strengthen these results, I would like to see more residue analysis being completed on artifacts from the Intermediate period. If more residue results present positive for bison, I believe this would suggest trade between groups to the southwest where the bison ranges were known to have existed (Figure 4.45)

5) *Does the size of the anvil affect what materials are processed on it?*

I do not have a definitive answer to this question as I do not have enough conclusive results. Anvil stone # 6451 weighed 9065 grams (held 38.4 % of identified phytoliths), #6452 weighed 6163 grams (held 18.7% of identified phytoliths), #6453 weighed 3133 grams (held 9.0% of identified phytoliths), #6454 weighed 3382 grams (held 17.8 % of identified phytoliths), and #6455 weighed 6560 grams (held 16.0% of identified phytoliths). While there is a correlation between the size and the amount of phytoliths present within the samples taken, there is not a correlation between what types of organic material were processed on them and size. Therefore, at this time I am only able to state that I do not see a correlation between the size of the anvil stones and the materials that were processed on them. Further residue analysis on prospective anvil stones should be completed. I can also state that the anvil stones are, in general, larger stones with flat surfaces that would allow for the processing of materials on them. They also have a flat bottom surface to allow for a stable base so that the stones would not roll or move during processing of materials, which would include crushing and rolling materials across the flat top. I would suggest that present and future researchers working

on the Intermediate period in Labrador and Quebec should make a conscious effort to collect anvil stones properly and submit them for residue analysis.

6) *Should future researchers of the Intermediate period use residue analysis on the anvil stones and what materials should they test for?*

I fully believe that future researchers working on the Intermediate period should utilize residue analysis. This form of analysis is an invaluable look at the organic materials that were being worked within a site area. This information is not able to be discerned otherwise due to poor preservation conditions within the boreal forest. Future researchers should be trained in the extraction of the phytoliths and residues for analysis. Ultimately, it would be ideal to create a database of all known residue and phytolith samples within the Intermediate period of Labrador, and perhaps to expand this to all time periods in Labrador. In order to do this, there would need to be a dedicated laboratory space with the necessary equipment in Labrador, along with trained individuals who are able to prepare and analyse the samples.

*Concluding Remarks*

Area 11 of archaeological site FjCa-51, situated within Sheshatshiu, Labrador has provided a valuable further glimpse into the Intermediate period of Labrador. Based upon the stone tool analysis, mapping, and residue analysis I was able to conclude that the area was a short-term habitation site that saw a single occupation. The raw material present on the site came from a mixture of both local and non-local sources, which provide clues as to the movement and trade of resources 3500-1800 years before the present. I also set out to do something that has not been published yet within Intermediate period research. I

used residue analysis to gain information on organic materials that were present and potentially processed on site.

As the analysis for this research project ends, I want to instill in the readers that future research and publication regarding the Intermediate period in Labrador is imperative. While research into the Intermediate period has been ongoing since the mid-1900's, it has lacked detailed analysis and publication of results. Researchers need to do better to bring archaeological knowledge of the Intermediate period to the public and make it easily accessible and understandable. In addition, they should bring a community, or public, archaeology aspect to their work by involving the Innu First Nation. By both publishing results and interacting with the public, there will come a greater understanding of the Intermediate period in Labrador.

# Bibliography


Adams, Jacob S. and Douglas H. Macdonald

2015 Differential Selection of Lithic Raw Materials by Prehistoric Hunter-Gatherers in the Upper Yellowstone River Valley, Montana/Wyoming. In *Toolstone Geography of the Pacific Northwest,* edited by Terry L. Ozbun and Ron L. Adams. Pp208-217. Archaeology Press, Simon Fraser University.

Alix, Claire

2005 Deciphering the Impact of Change on the Driftwood Cycle: Contribution to the Study of Human Use of Wood in the Arctic. *Global and Planetary Change* 47:83-98.

Alperson-Afil, Nira

2019 Digitizing the Undigitized: Converting Traditional Archaeological Records Into Computerized, Three-Dimensional Site Reconstruction. *Journal of Geographic Information System* 11:747-765.

Andrefsky, W. Jr.

1998 Lithics: Macroscopic Approaches to Analysis. Cambridge University Press, Cambridge.

1994 Raw-Material Availability and the Organization of Technology. *American Antiquity* 59(1):21-34.

Arbour, Chelsee, Napes Ashini, Anthony Jenkinson, and Stephen Loring

2018 To Bring Back the Summer: Seeking a Concordance between Innu History and Archaeology. *Recherches amérindiennes au Québec* 48(3):31-44.

Banning, E.B.

2000 The Archaeologist's Laboratory. The Analysis of Archaeological Data. Kluwer Academic Publishers, New York.

Bar-Yosef, Ofer and Philip Van Peer

2009 The Chaine Operatoire Approach in Middle Paleolithic Archaeology. *Current Anthropology* 50(1):103-131

Betts, Matthew, W., and M. Gabriel Hrynick

2021 *The Archaeology of the Atlantic Northeast*. University of Toronto Press, Toronto.

Black Spruce Heritage Services (BSHS)
2019 Sheshatshiu Archaeology Review, Sheshatshiu, Labrador. Unpublished Report submitted to Provincial Archaeology Office, St. John's.

2004 Archaeological Assessment and Inventory, Community of Sheshatshiu, Labrador, Permit Numbers 03.38, 03.44. Unpublished Report on file, Sheshatshiu Innu Band Council, Provincial Archaeology Office.

Boisvert, Richard A., and Gail N. Bennett
2004 Debitage Analysis of 27-HB-1, A Late Paleoindian/ Archaic Stratified Site in Southern New Hampshire. *Archaeology of Eastern North America* 32:89-100.

Boulanger, Matthew T., Gregory D. Lattanzi, Cody C. Roush, and Michael D. Galscock
2017 Geochemical Analysis of Mica Source Specimens and Artifacts from the Abbot Farm National Historic Landmark (28ME1). *American Antiquity* 82(2):374-396

Bowden, Mark
1999 Unravelling the Landscape: An Inquisitive Approach to Archaeology. Tempus Publishing, Stroud.

Boyle, Joseph
2018 A Multiomic Approach to Palaeogenetic Investigation of Ancient North American Bison, Master's Thesis, Department of Biology, Lakehead University, Thunder Bay, Ontario.

Brake, Jamie E.S
2007 Ashuanipi Kupitan: Excavation at the Ferguson Bay 1 Site in Western Labrador, Master's Thesis, Department of Anthropology, Archaeology Unit, Memorial University of Newfoundland, St. John's, Newfoundland.

2006 A Comparison of Maritime Archaic Indian and Intermediate Indian Site Distribution in Labrador. *Nexus* 19:8-31.

Brézillon, Michel. N
1968 *La Dénomination des objets de pierre taillée. Matériaux pour un vocabulaire des préhistoriens de langue français*. Gallia préhistoire Suppl.4. Éditions Du Centre national de la recherche scientifique, Paris, France.

Caraher, William
2015 Slow Archaeology. *North Dakota Quarterly* 80(2):43-52.

Caruana, Matthew, V., Daniel Tasker, and Dominic J. Stratford
2019 Identifying Raw Material Transportation and Reduction Strategies From the Lithic Scatters at Elandsdrift Farm (Cradle of Humankind World Heritage Site), South Africa. *African Archaeological Review* 36:271-289.

Chazan, Michael
2020 Levallois. *Anthropology*.doi.org/10.1093/acrefore/9780190854584.013.28, accessed December 2, 2020.

Cowan, F. L.
1999 Making Sense of Flake Scatter: Lithic Technological Strategies and Mobility. *American Antiquity* 64(4): 593-607.

Curtis, Jenneth, Jamie Brake, Pierre M. Desrosiers, and Adrian Burke
2010 Ramah Bay Quarry Archaeological Research Project. *In Provincial Archaeology Office 2009 Archaeology Review* 8:36-40. St. John's, Newfoundland.

Desrosiers, Pierre M. and Mikkel Sørensen
2012 Eastern Arctic Under Pressure: From Paleoeskimo to Inuit Culture (Canada and Greenland). In *The Emergence of Pressure Blade Making: From Origin to Modern Experimentation,* edited by Pierre M. Desrosiers, pp. 375-400. Springer, New York.

Dibble, Harold L., Utsav a. Schurmans, Radu P. Iovita, and Michael V. Mclaughlin
2005 The Measurements and Interpretations of Cortex in Lithic Assemblages. *American Antiquity* 70(3):545-560.

Dionne, Marie Michelle
2015 Représentation matérielle de la chaîne opératoire de traitement des peaus sur des sites paléoesquimaux du Nunavik. *Études/Inuit/Studies* 39(2):173-203.

Donaldson, J. Allen, Eric A. de Kemp
1998 Archaean Quartz Arenites in the Canadian Shield: Examples from the Superior and Churchill Provinces. *Sedimentary Geology* 120(1-4):153-176.

Driscoll, K.
2009 Exploring the Chaîne Opératoires in Irish Quartz Lithic Traditions: Current Research. *Internet Archaeology* 26. https://intarch.ac.uk/journal/issue26/driscollb_toc.html, accessed August 20, 2021.

Eliassen, Eivind R.
2015 On the Edge of Lithics: A Chaîne Opératoire Analysis of Quartzite Assemblages from Two Mesolithic Sites at Rena Hedmark, Norway, Master's Thesis, Department of Archaeology, Conservation and History, University of Oslo, Oslo, Norway.

Erwin, John C., Donald H Holly Jr., Stephen H. Hull, and Timothy L. Rast
2005 Form and Function of Projectile Points and the Trajectory of Newfoundland Prehistory. *Canadian Journal of Archaeology/ Journal Canadien d'Archéologie* 29(1):47-67

Fitzhugh, William W.
2006 Settlement, Social and Ceremonial Change in the Labrador Maritime Archaic. In *The Archaic of the Northeast,* edited by David Sanger and M.A.P Renouf, pp. 47-82. University of Maine Press, Maine.

1975 A Comparative Approach to Northern Maritime Adaptations. In *Prehistoric Maritime Adaptations of the Circumpolar Zone*, edited by William Fitzhugh, pp. 339-386. The Hague, Chicago.

1973 Smithsonian Archaeological Investigations on the Central Labrador Coast in 1973: A Preliminary Report. *Bulletin (Canadian Archaeological Association)* 5:77-90.

1972 Environmental Archaeology and Cultural Systems in Hamilton Inlet, Labrador: A survey of the Central Labrador Coast from 3000 B.C. to the Present. *Smithsonian Contributions to Anthropology* Vol.16. Smithsonian Institution, Washington.

Fitzhugh, William W., and H.F. Lamb
1985 Vegetation History and Culture Change in Labrador Prehistory. *Arctic and Alpine Research* 17(4): 357-370.

Fitzhugh, William W. and Jeff Martin
2021 The Martin North River Site and the Saunders Phase in Labrador. In *Provincial Archaeology Office 2020 Archaeology Review* 19:62-74.

Foster, David R.
1983 The History and Pattern of Fire in the Boreal Forest of Southeastern Labrador. *Canadian Journal of Botany* 61(9):2459-2471.

Foster, David R., and George A. King
1984 Landscape Features, Vegetation and Developmental History of a Patterned Fen in South-Eastern Labrador, Canada. *Journal of Ecology* 72(1):115-143.

Fulton, R.J. and D.A. Hodgson
1979 Wisconsin Glacial Retreat, Southern Labrador. In *Current Research Part C*, Geological Survey of Canada Paper 79-1C, pp.17-21, Ottawa.

Gonzalez, Claudia A.A.
2014 Beyond Flint: A Chaine Operatoire Analysis of Jasper Finds From Mesolithic Localities in Hedmark, Norway, Master's Thesis, Department of Archaeology, Conservation and History, University of Oslo, Oslo, Norway. http://urn.nb.no/URN:NBN:no-45966, accessed November 3, 2018.

Goren-Inbar, N., G. Sharon, N, Alperson-Afil, I. Laschiver
2008 The Acheulean Massive Scrapers of Gesher Benot Ya'aqov: A Product of the Biface Chaîne Opératoire. *Journal of Human Evolution* 55:702-712. DOI:10.1016/j.jhevol.2008.07.005, accessed November 15, 2018.

Gramly, Richard Michael
1978 Lithic Source Areas in Northern Labrador. *Arctic Anthropology* 15(2):36-74.

Hartery, Latonia
2001 The Cow Head Complex. Master's thesis, Department of Archaeology, University of Calgary, Calgary, Alberta.

Hellam, Lena., Willy Tegel, Jan Geyer, Alexander V. Kirdyanov, Anatoly N. Nikolaev, Ólafur Eggertsson, Jan Altman, Frederick Reinig, Sandro Morganti, Lukas Wacker, Ulf Büntgen
2017 Dendro-Provenancing of Arctic Driftwood. *Quaternary Science Review* 162(2017):1-11.

Helwig, Kate., Valery Monahan, Jennifer Poulin, and Thomas D. Andrews
2014 Ancient Projectile Weapons from Ice Patches in Northwestern Canada: Identification of Resin and Compound Resin-Ochre Hafting Adhesives. *Journal of Archaeological Science* 41:655-665.

Henry, Donald, O. and Veronica Mraz
2020 Lithic Economy and Prehistoric Human Behavioral Ecology Viewed from Southern Jordan. *Journal of Archaeological Science: Reports* 29:1-12.

Higdon, John Lawrence
2008 An Experimental Approach to Inuit Ground Stone Technology at Nachvak Fiord, Labrador. Master's thesis, Department of Anthropology and Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

Holly Jr, Donald H
2013 *History in the Making: The Archaeology of the Eastern Subarctic.* AltaMira Press, Maryland.

Hood, Bryan, C.
1993 The Maritime Archaic Indians of Labrador: Prehistoric Social Organization. *Newfoundland Studies* 9(2):163-184.

Hull, Stephen
2021 Personal Communications

2002 Tainte Uet Tshinauetamin? A Trail to Labrador, Recent Indians and the North Cove Site. Master's thesis Department of Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

IED Enterprises and Jaques Whtiford Environment Limited
1999 Labrador Hydro Project, 1998 Environmental Studies, Draft, Archaeological Investigations at the Wapeneau Mikue Site (FjCa-47), Near North West River, Labrador, LHP 98.23. Unpublished Report on file, Provincial Archaeology Office, Government of Newfoundland and Labrador, St. John's.

Inizan, M.L., M. Reduron-Ballinger, H. Roche, and J. Tixier
1999 Technology and Terminology of Knapped Stone. Translated by J. Féblot-Augustins. *Cercle de recherches et d'études préhistoriques*, France.

Innu Environmental Limited Partnership
2003 Archaeological Assessment of New Construction and Utility Upgrades, Sheshatshiu, Labrador, 2002 HROA and Site Assessment, Permit # 02.50. Submitted to Sheshatshiu Innu Band Council. Unpublished Report on file, Provincial Archaeology Office, Government of Newfoundland and Labrador, St. John's

2002 Trans-Labrador Highway Phase III, Happy Valley – Goose Bay to Cartwright Junction, Final Report: Historic Resource Component Study. Submitted to Department of Works, Services, and Transportation. Unpublished Report of file, Provincial Archaeology Office, Government of Newfoundland and Labrador, St. John's.

Jacobs, John and Trevor Bell
2008 Labrador's Changing Climate. Paper presented at the Climate Change and Renewable Resources in Labrador: Looking Toward 2050 Workshop, North West River, Labrador.

Jacques Whitford Environment Limited and Innu Environmental
2001 Labrador Hydro Project 2000 Studies, Historic Resources Field Program LHP 00-17 Report. Unpublished Report on file, Provincial Archaeology Office, Government of Newfoundland and Labrador, St. John's.

Jalbert, Catherine L.
2011 A Lesson in Stone: Examining Patterns of Lithic Resource Use and Craft-Learning in the Minas Basin Region of Nova Scotia. Master's thesis Department of Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

Jenkinson, Anthony
2010 Summary of *Tshikapisk* Excavations at *Kamestastin*: 2008 to 2010. *Provincial Archaeology Office 2009 Archaeology Review* 9:81-90. St. John's, Newfoundland.

Jenkinson, Anthony and Chelsee Arbour
2014 The Year of Slate: Archaeology Fieldwork at Kamestastin, spring 2013. Permit 13.03. *Provincial Archaeology Office 2013 Archaeology Review* 12:67-83. St. John's, Newfoundland.

Jenkinson, Anthony and Stephen Loring
2018 The Toad-Man's Estate: An Archaeological Reconnaissance of the *Shapeiau* (Shapio) Lake region, *Nitassinan. Provincial Archaeology Office 2017 Archaeology Review* 16: 168-183. St. John's, Newfoundland.

2012 Tshikapisk Foundation: Archaeological Research in 2011. *Provincial Archaeology Office 2011 Archaeology Review* 10: 89-102. St. John's, Newfoundland and Labrador.

Jeske, J. Robert
2003 Lithic Raw Material Procurement and Use within Mississippian Social Networks. In *Theory, Method, and Practice in Modern Archaeology,* edited by Robert J. Jeske and Douglas K. Charles, pp. 223-237. Praeger Publishers, Westport.

Jordan, R.H
1975 Pollen Diagrams from Hamilton Inlet, Central Labrador and their Environmental Implication for the Northern Maritime Archaic. *Arctic Anthropology* 12(2):92-116.

Josephs, Richard L., and Scott W. Neilsen
2009 Geoarchaeological Investigations at Two Intermediate Indians Sites near Happy Valley – Goose Bay, Labrador: Implications for Late Holocene Paleoshoreline Reconstruction and Settlement Patterning in Western Hamilton Inlet. *Canadian Journal of Archaeology/ Journal Canadien d'Archéologie* 33(1): 92-114.

Kooyman, Brian P.
2000 *Understanding Stone Tools and Archaeological Sites*. University of Calgary Press, Calgary.

Lacroix, Dominic
2015 Mobility, Ceremonialism, and Group Identity in Archaic Newfoundland. PhD dissertation, Department of Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

Lamb, H.F
1985 Palynological Evidence for Postglacial Change in the Position of Tree Limit in Labrador. *Ecological Monographs* 55(2):241-258).

1980 Late Quaternary Vegetation History of Southeastern Labrador. *Arctic and Alpine Research* 12(2):117-135.

Lazenby, M.E.C
1980 Prehistoric Sources of Chert in Northern Labrador: Field Work and Preliminary Analyses. *Arctic* 33(3):628.645.

LeBlanc, David., Isabelle Duval, and Jean-François Moreau
2010 Geochemical Signature of Mistassini Quartzite and Ramah Chert Artefacts and Quarries, Québec /Labrador, Canada. In *Ancient Mines and Quarries: A Trans-Atlantic Perspective,* edited by Margaret Brewer-LaPorta, Adrian Burke, and David Field, pp. 67-84. Oxbow Books, Oxford.

Lemonnier, Pierre
2012 *Mundane Objects: Materiality and Non-Verbal Communication*. Volume 10. UCL Institute of Archaeology Critical Cultural Heritage Series. Walnut Creek, CA.

1989 Bark Capes, Arrowheads and Concorde: On Social Representations of Technology. In *The Meaning of Things: Material Culture and Symbolic Expression*, edited by Ian Hodder, pp. 156-171. Unwin Hyman, London.

1986 The Study of Material Culture Today: Toward an Anthropology of Technical Systems. *Journal of Anthropological Archaeology* 5:147-186.

Lengyel, György
2015 Lithic Raw Material Procurement at Bodrogkeresztúr-Henye Gravettian Site, Northeast Hungary. *Quaternary International* 359-360:292-303.

Leroi-Gourhan, Andre
1964 *Le geste et la parole.* Translated by Anna Bostock Berger. Massachusetts Institute of Technology Press, Cambridge, Massachusetts.

Loring, Stephen
2002 "And They Took Away the Stones from Ramah": Lithic Raw Material Sourcing and Eastern Arctic Archaeology. In *Honouring our Elders: A History of Eastern Arctic Archaeology*, edited by William W. Fitzhugh, Stephen Loring, and Daniel Odess. Arctic Studies Center, Washington.

1992 Princes and Princesses of Ragged Fame: Innu Archaeology and Ethnohistory in Labrador. PhD Dissertation, Department of Anthropology, University of Massachusetts, Amherst.

1989 Une réserve d'outils de la période intermédiaire sur la Côte du Labrador. *Recherches amérindiennes au Québec* 19(2-3) :45.57

Loring, Stephen, Moira McCaffrey, Peter Armitage, and Daniel Ashini
2003 The Archaeology and Ethnography of a Drowned Land: Innu Nation Research Along the Former Michikamats Lake Shore in Nitassinan (Interior Labrador). *Archaeology of Eastern North America* 31(2003):45-72.

Madden, Marcie M.
1976 A Late Archaic Sequence in Southern Labrador. M.A thesis, Department of Anthropology, Memorial University of Newfoundland.

McCaffrey, Moira
2011 Ancient Social Landscapes in the Eastern Subarctic. *In Hunter-Gatherer Archaeology as Historical Process*, edited by Kenneth E. Sassaman and Donald Holly Jr., pp. 143-166. University of Arizona Press, Tucson.

1989 Archaeology in Western Labrador. In *Archaeology in Newfoundland and Labrador 1986,* Vol.7, edited by J. Callum Thomson and Jane Sproull Thomson, pp. 72-114. Historic Resources Division, St. John's, Newfoundland.

McCaffrey, Moira, T., Stephen Loring, and William W. Fitzhugh
1989 An archaeological reconnaissance of the Seal Lake region, interior Labrador. In *Archaeology in Newfoundland and Labrador 1986,* Vol.7, edited by J. Callum Thomson and Jane Sproull Thomson, pp. 114-163. Historic Resources Division, St. John's, Newfoundland.

McDonald, Jerry N., and George E. Lammers
2002 *Bison antiquus* from Kenora, Ontario, and Notes on the Evolution of North American Holocene *Bison.* In *Cenozoic Mammals of Land and Sea: Tributes to the Career of Clayton E. Ray*, edited by Robert J. Emry, pp. 83-98. Smithsonian Institute, Washington, DC.

McGhee, Robert, and James A. Tuck
1975 *An Archaic Sequence from the Strait of Belle Isle. National Museum of Man Mercury Series, Archaeological Survey of Canada*, Paper No.34, Ottawa.

McPherson-Smith, Cameron
2015 Use-wear, chaîne opératoire and labour organisation among Pacific Northwest Coast sedentary foragers. *Antiquity* 89:662-682.

Morgan, Colleen and Holly Wright
2018 Pencils and Pixels: Drawing and Digital Media in Archaeological Field Recording. *Journal of Field Archaeology* 43(2):136-151.

Munsell Color
2004 *Geological Rock-Colour Chart*. Munsell Color, Grand Rapids.

Nagle, C.
1984 Lithic Raw Materials Procurement and Exchange in Dorset Culture Along the Labrador Coast. PhD dissertation, Department of Anthropology, Brandeis University, Waltham.

1978 Indian Occupations of the Intermediate Period in the Central Labrador Coast: A Preliminary Synthesis. *Arctic Anthropology* 15(2):119-145.

National Park Service
2017 Bison Bellows: Back Home on the Range. Electronic document, https://www.nps.gov/articles/bison-bellows-1-7-16.htm, Accessed January 12, 2021

Neal, H.E.
2000 Iron Deposits of the Labrador Trough. *Exploration and Mining Geology* 9(2):113-121.

Neilsen, Scott
2017 Archaeology in Upper Lake Melville. *Provincial Archaeology Office 2016 Archaeology Review* 15:187-202. St. John's, Newfoundland

2016 An Archaeological History of Ashuanipi, Labrador. PhD Dissertation Department of Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

2014 2013 Archaeological Investigations, Upper Lake Melville, Labrador. *Provincial Archaeology Office 2013 Archaeology Review* 12:113-121.

2013 Archaeological Mitigation in Sheshatshiu. *Provincial Archaeology Office 2012 Archaeology Review* 11: 101-115. St. John's, Newfoundland.

2011b 2011 Excavations in Sheshatshiu. *Provincial Archaeology Office 2010 Archaeology Review* 9:117-119. St. John's Newfoundland.

2011a Archaeological Mitigation in Sheshatshiu, 2010 Fieldwork, Permit 10.14. Unpublished report on file. Provincial Archaeology Office, Sheshatshiu Innu First Nation, Innu Nation.

2010b Archaeological Investigations in Sheshatshiu, Labrador. *Provincial Archaeology Office 2009 Archaeology Review* 8:95-101. St. John's, Newfoundland.

2010a Archaeological Mitigation in Sheshatshiu, 2009 Fieldwork, Permit 09.14. Unpublished report on file. Provincial Archaeology Office and Sheshatshiu Innu First Nation, Innu Nation.

2006 Intermediate Indians: The View from Ushpitun 2 and Pmiusik u1. Master's Thesis Department of Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland.

Neilsen, Scott, Chelsee Arbour, Jay Andrew, Nishita Aurnab, Meghan Bush. Bob Jackman, Yu-Ru Lee, Chase Mclean, Linda Nylen, Emma Walker, and Susanne Williams

2019 Community Archaeology and Cultural Resource Management in Sheshatshiu, Labrador – 2018. *Provincial Archaeology Office Annual Review 2018* 17:190-197.

Neilsen, Scott, Chelsee Arbour, Meghan Walley, Leena Bethune, Riley Winters, Sophia Campion, Mary Denniston, and Gayle Quehe

2018 Community Archaeology and Cultural Resource Management in Sheshatshiu, Labrador. *Provincial Archaeology Office Annual Review 2017* 16:198-204.

Newman, Jay R.

1994 The Effects of Distance on Lithic Material Reduction Technology. *Journal of Field Archaeology* 21(4):491-501.

Odell, George H.

2004 *Lithic Analysis*. Manuals in Archaeological Method, Theory, and Technique. Plenum Publishers, New York.

PaleoResearch Institute

2000 Protein Residue Collection Manual, https://static1.squarespace.com/static/5c9e25dc523958515c3804ba/t/5ca276ea8a0ac50001cd7778/1554151146178/Protein_Sampling_Manual.pdf, accessed January 15th, 2020.

Pereira, Telmo., João Marreiros, Eduardo Paixão, and Rui Martins
2017 Mechanical Experiments to Test Quartzite VS Chert Edge Reduction. In *The Exploitation of Raw Materials in Prehistory: Sourcing, Processing and Distribution*, edited by Telmo Pereira, Xavier Terradas and Nuno Bicho, pp. 611-626. Cambridge Scholars Publishing, UK.

Pecora, Albert M.
2001 Chipped Stone Tool Production Strategies and Lithic Debris Patterns. In *Lithic Debitage: Context, Form, Meaning*, edited by William Andrefsky, pp. 173-190. University of Utah Press, Salt Lake City.

Penashue, Tshaukuesh Elizabeth
2019 *Nitinikiau Innusi: I Keep the Land Alive.* University of Manitoba Press, Winnipeg.

Pintal, Jean-Yves
1998 Aux frontières de la mer : La préhistoire de Blanc-Sablon. Les Publications du Québec, collection Patrimoines, Dossiers 102. Municipalité de Blanc-Sablon.

2001 On the (Early) Origins of the Beothuk. Presented at the 33rd Annual Meeting of the Canadian Archaeological Association, Ontario.

Quartermaine, Jamie., Brandon R. Olson, and Ann E. Killebrew
2014 Image-Based Modeling Approaches to 2D and 3D Digital Drafting in Archaeology at Tel Akko and Qasrin: Two Case Studies. *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 2(2):110-127.

Renouf, M.A.P
2017 *Ancient Cultures, Bountiful Seas: The Story of Port au Choix*. Historic Sites Association of Newfoundland and Labrador, St. John's.

Rifkin, Risaan F.
2015 Ethnographic and Experimental Perspectives on the Efficacy of Ochre as a Mosquito Repellent. *The South African Archaeological Society* 70(201): 64-75.
2011 Assessing the Efficacy of Red Ochreas a Prehistoric Hide Tanning Ingredient. *Journal of African Archaeology* 9(2): 131-158.

Rivals, Florent., Nikos Solounias, and Matthew C. Mihlbachler
2007 Evidence for Geographic Variation in the Diet of Late Pleistocene and Early Holocene *Bison* in North America, and Difference from the Diets of Recent *Bison*. *Quaternary Research* 68(3):338-346.

Salisbury, Roderick B., and Katharina Rebay-Salisbury
2017 Processes of theory: from production sequences and processes to chaînes opératoires and object biographies. In *Material Chains in Late Prehistoric Europe and the Mediterranean: Time, Space and Technologies of Production,* edited by Alexis Gorgues, Katharina Rebay-Salisbury, and Roderick B. Salisbury, pp. 15-29. Ausonius Éditions, Bordeaux.

Sanderson, Eric W., Kent H. Redford, Bill Weber, Keith Aune, and Dick Baldes
2008 The Ecological Future of the North American Bison: Conceiving Long-Term, Large-Scale Conservation of Wildlife. *Conservation Biology* 22(2):252-266.

Schiffer, Michael B.
2010 *Behavioural Archaeology: Principles and Practice*. Routledge, London.

1986 Radiocarbon Dating and the "Old Wood" Problem: The Case of the Hohokam Chronology. Journal of Archaeological Science 13:13-30.

Schwarz, F.A
1998 In the Eagle's Nest: Archaeological Investigations in the Mistassini Lake Area, Upper Eagle River, South-Central Labrador. Unpublished Report on file. Provincial Archaeology Office, Government of Newfoundland and Labrador, St. John's.

Schwarz, Fred., Roy Skanes, Sara Beanlands, and Corey Hutchings
2016 Historic Resources Management Program Lower Churchill Project, Central Labrador 2015. *Provincial Archaeology Office 2015 Archaeology* Review 14:199-210. St. John's, Newfoundland.

Scott-Cummings, Linda and R.A. Varney
2020 *Protein Residue (CIEP) Analysis of Samples from Sheshatshiu, Site FjCa-51, Newfoundland, Canada*. PaleoResearch Institute. Prepared for Ashley Cameron, Report Number 2020-018.

Sellet, Frederic
1993 Chaîne Opératoire: The Concept and its Applications. *Lithic Technology* 18(1-2):106-112. https://jstor.org/stable/23272868, accessed October 7, 2018.

Short, Susan, and Harvey Nichols
1977 Holocene Pollen Diagrams from Subarctic Labrador-Ungava: Vegetation History and Climatic Changes. *Arctic and Alpine Research* 9(3):265-290.

Shott, Michael J
2003 Chaîne Opératoire and Reduction Sequence. *Lithic Technology* 28(2):95-105.

Sievert April K., and Karen Wise
2001 A Generalized Technology for a Specialized Economy: Archaic Period Chipped Stone at Kilometer 4, Peru. In *Lithic Debitage: Context, Form, Meaning*, edited by William Andrefsky Jr., pp. 80-105. The University of Utah Press, Salt Lake City.

Sørensen, Mikkel
2012 The Arrival and Development of Pressure Blade Technology in Southern Scandinavia. In *The Emergence of Pressure Blade Making: From Origin to Modern Experimentation,* edited by Pierre M. Desrosiers, pp. 237-259. Springer, New York.

Stassinu Stantec Limited Partnership
2019a Lower Churchill Hydroelectric Development Project Historic Resources Assessment and Recovery Program Final Report. Report submitted to Nalcor Energy and Provincial Archaeology Office, St. John's.

2019b Lower Churchill Hydroelectric Development Project 2017 Historic Resources Assessment and Recovery Program Permit #17.15. Report submitted to Nalcor Energy and Provincial Archaeology Office, St. John's.

2016 Lower Churchill Hydroelectric Development Project 2015 Historic Resources Assessment and Recovery Program. Report submitted to Nalcor Energy and Provincial Archaeology Office, St. John's.

2014a Lower Churchill Hydroelectric Development Project 2013 Historic Resources Assessment and Recovery Program. Report submitted to Nalcor Energy and Provincial Archaeology Office, St. John's.

2014b 2012 Historic Resources Assessment and Recovery Field Program. Report submitted to Nalcor Energy and Provincial Archaeology Office, St. John's.

St. Croix. Rick
2002 *Soils of the Happy Valley East Area, Labrador*. Soil and Land Management Division, Department of Forest Resources and Agrifoods.

Stopp, Marianne
2013 Kitjigattalik- The Ramah Chert Quarries. Submitted to Historic Sites and Monuments Board of Canada, Submission Report 2013-15. On File, Parks Canada.

2008 FbAx-01: A Daniel Rattle Hearth in Southern Labrador. *Canadian Journal of Archaeology/ Journal Canadien d'Archéologie* 32(1): 96-127.

1997 Long-Term Coastal Occupancy Between Cape Charles and Trunmore Bay, Labrador. *Arctic* 50(2):119-137.

Trigger, B. G.
1989 *A History of Archaeological Thought*. Cambridge: Cambridge University Press.

Tuck, James A.
1976 *Newfoundland and Labrador Prehistory*. Archaeological Survey of Canada. National Museum of Man, Ottawa.

Whitridge, Peter, and James Woollett
2008 Summary of 2007 Fieldwork at Iglosiatik and Komaktorvik Fiord. *Provincial Archaeology Office 2007 Archaeology Review* 6:60-61. St. John's, Newfoundland.

Whittaker, John C. and Eric J. Kaldahl
2001 Where the Waste Went: A Knapper's Dump at Grasshopper Pueblo. In *Lithic Debitage: Context, Form, Meaning*, edited by William Andrefsky Jr., pp.32-60. The University of Utah Press, Salt Lake City.

Willhite, Brenton E.
2016 Status and Stones in the Casa Grandes Region: Analysis of Debitage from the 76 Draw Site (LA 156980). *KIVA* 82(2):95-116.

Williams, Justin P., Andrew I. Duff, and William Andrefsky Jr.
2013 Debitage Stylistic Variability at Cox Ranch Pueblo. *Lithic Technology* 38(1):3-16.

Wilson, Lucy
2007a Terrain Difficulty as a Factor in Raw Material Procurement in the Middle Paleolithic of France. *Journal of Field Archaeology* 32(3):315-324.

2007b Understanding Prehistoric Lithic Raw Material Selection: Application of a Gravity Model. *Journal of Archaeological Method and Theory* 14(4):388-411.

Wilson, Michael C., Leonard V Hills, and Beth Shapiro
2008 Late Pleistocene Northward-Dispersing *Bison antiquus* from the Bighill Creek Formation, Gallelli Gravel Pit, Alberta, Canada, and the Fate of *Bison occientalis. Canadian Journal of Earth Sciences* 45:827-859.

Wolf, Sibylle., Rimtautas Dapschauskas, Elizabeth Velliky, Harald Floss, Andrew W. Kandel, and Nicholas J. Conard.
2018 The Use of Red Ochre and Painting During the Upper Paleolithic of the Swabian Jura in the Context of the Development of Ochre Use in Africa and Europe. *Open Archaeology* 4:185-205.

Wolff, Christopher B
2008 A Study of the Evolution of Maritime Archaic Households in Northern Labrador. PhD dissertation, Southern Methodist University.

Wolff, Christopher B., Robert J. Speakman, and William W. Fitzhugh
2014 Assessment of Portable X-Ray Fluorescence Analysis for the Evaluation of Slate Procurement and Exchange: A Maritime Archaic Case Study from Newfoundland and Labrador. *Open Journal of Archaeometry* 2:114-117.

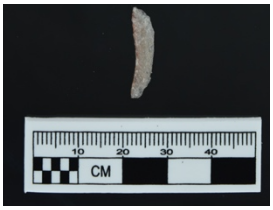
Wolfrum, A.A
2019 Archaeo-Geophysical Survey on the Ushpitun Landform, Happy Valley-Goose Bay, Labrador. Master's thesis, Department of Archaeology, Memorial University of Newfoundland, St. John's.

# APPENDIX A – ARTIFACT COLOUR CLASSIFICATIONS

| Large Colour Groups | Smaller Colour Groupings |
|---|---|
| Black | Brownish black |
| Brown | Dark reddish brown, Dark yellowish brown, Dusky brown, Greyish brown, Light brown, Light brown and pale brown Moderate brown, Moderate reddish brown, Moderate yellowish brown, Moderate yellowish brown and light brown, Pale brown, Pale reddish brown, Pale yellowish brown, Mottled pale yellowish brown and dark yellowish brown, Pale yellowish brown and light brown, Pale yellowish brown and pale brown, Reddish brown |
| Grey | Brownish grey, Brownish grey and pinkish grey, Dark greenish grey, Dark grey, Grey, Grey and pale brownish grey, Light brownish grey, Light grey, Light grey and light brownish grey, Light olive grey, Light olive grey and pinkish grey, Medium bluish grey, Medium dark grey, Olive grey, Pinkish grey, Very light grey, and Yellowish grey |
| Mixed | Dark reddish brown with light specks, Dark grey with salt and pepper, Grey with green, Brownish grey and pale yellowish brown, Greyish orange pink and pale yellowish brown, Medium bluish grey with light grey and white specks, Moderate pink and greyish red, Moderate yellowish brown and light brown, Light brown and yellowish grey, Pale yellowish brown and brownish grey, Pale yellowish brown and medium grey, Solid very light grey and then darker grey, red, and green, White, grey, moderate orange pink, and light brown, Mixed darker colours, and Mixed |

| **Large Colour Groups Cont'd** | **Smaller Colour Groupings Cont'd** |
|---|---|
| Olive | Pale Olive |
| Orange | Greyish orange and Very pale orange |
| Pink | Greyish orange pink, Greyish pink, Moderate orange pink, and Moderate pink |
| Purple | Greyish Purple |
| Red | Blackish red, Dusky red, Greyish red, Light red, Moderate red, Pale red, and Red |
| White | White |

# APPENDIX B – TOOL PHOTOGRAPHS

| | | | |
|---|---|---|---|
| **6003 utilized chert flake**  | **6004 utilized quartzite flake**  | **6005 utilized quartzite flake**  | **6016 utilized quartzite flake**  |
| **6025 chert scraper**  | **6026 utilized chert flake**  | **6027 utilized quartzite flake**  | **6078B Utilized quartzite flake shatter**  |
| **6079A Utilized quartzite flake**  | **6106A unhafted quartzite biface**  | **6106B Unhafted quartzite biface fragment**  | **6114 Quartz biface fragment**  |

| | | | |
|---|---|---|---|
| **6120 utilized quartzite flake**  | **6127 Quartzite scraper**  | **6129 Utilized quartzite flake**  | **6139 Quartzite uniface**  |
| **6142 Quartzite biface**  | **6166 Utilized quartzite flake**  | **6244 Utilized quartzite flake**  | **6245 Quartzite hammerstone**  |
| **6257 chert uniface**  | **6289 chert point base**  | **6306 Quartzite biface fragment**  | **6312 utilized chert flake**  |
| **6313 quartz biface fragment**  | **6315 pestle fragment**  | **6378 Pestle**  | **6399 utilized quartzite flake**  |

| | | | |
|---|---|---|---|
| **6414 utilized slate flake** | **6418 quartzite pestle** | **6429 utilized quartzite flake** | **6433 utilized quartzite flake** |
|  |  |  |  |
| **6448A quartzite biface** | **933 chert biface** | **934 chert scraper** | **935 utilized chert flake** |
|  |  |  |  |
| **936 utilized quartzite flake** | **937 utilized quartz flake** | **938 chert biface** | **939 utilized quartzite flake** |
|  |  |  |  |

**940 Chert biface**

# APPENDIX C: FjCa-51 ARTIFACTS

| Cat # | Object | Material | Quant. | Colour | Feature | Unit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6000** | Flake Shatter | Chert | 1 | Yellowish Grey | No | N31 E31 | NW | N/A | N/A | N/A | |
| **6001** | Flake Shatter | Quartzite | 5 | Pale Yellowish Brown | No | N31 E31 | NW | N/A | N/A | N/A | Cortex present on one piece of flake shatter with a cortex score of 3 |
| **6002** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N31 E31 | NE | N/A | N/A | N/A | Larger piece may possibly be a flake; One shaped like trapezoid is likely a pressure flake; The last piece is likely distal flake shatter |
| **6003** | Utilized Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N32 E29 | SW | 17 | 2 | 56 | Believe to be manufactured via percussion, but resharpening of lateral margins via pressure flaking |
| **6004** | Utilized Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | SE | 31 | 76 | 51 | Possible retouch on left lateral margin; REFIT with LC:6005; Red inclusions within quartzite |
| **6005** | Utilized Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | SW | 35 | 27 | 51 | REFIT with LC:6004; Red inclusions within quartzite |
| **6006** | Shatter | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | SW | 42 | 23 | 51 | |
| **6007** | Pebble | Quartzite | 1 | Light Olive Grey | Feature 2 | N32 E29 | SW | 48 | 8 | 51 | |
| **6008** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | 69 | 9 | 49 | Red inclusions within quartzite on distal end |

| Cat # | Object | Material | Quant. | Colour | Feature | Unit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6009** | Flake Shatter | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | 75 | 12 | 52 | |
| **6010** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | 63 | 45 | 48 | Red ochre present on platform; Hard to tell if distal end missing or just how the flake detached |
| **6011** | Flake Shatter | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NE | 80 | 56 | 52 | Platform missing, but can feel a pronounced bulb of percussion |
| **6012** | Flake Shatter | Quartzite | 1 | Moderate Yellow Brown | Feature 2 | N32 E29 | NW | 70 | 19 | 49 | |
| **6013** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | 95 | 20 | 51 | Red inclusions in material |
| **6014** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | 97 | 24 | 51 | Secondary decortication flake |
| **6015** | Shatter | Quartzite | 7 | Pale Yellowish Brown | Feature 2 | N32 E29 | NE | | | | All pieces are quite small other than the one, large piece discussed in Description |
| **6016** | Utilized Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NE | | | | Red ochre present on fracture surface; seems to have been utilized at this size due to the red ochre on fracture area |
| **6017** | Flake | Quartzite | 2 | Light Brownish-grey | Feature 2 | N32 E29 | NE | | | | Small flakes |

| Cat # | Object | Material | Quant. | Colour | Feature | Unit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6018** | Pebble | Unidentified | 2 | Pale Yellowish Brown | Feature 2 | N32 E29 | NE | | | | Larger of two pebbles may be quartz; Unsure if this material was present in the soil being screened and not a part of Area 11 |
| **6019** | Shatter | Chert | 2 | Greyish Orange Pink | Feature 2 | N32 E29 | NE | | | | Very small pieces of shatter |
| **6017** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NE | | | | Complete flake |
| **6020** | Flake | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | | | | Red inclusions in quartzite material |
| **6021** | Flake Shatter | Quartzite | 1 | Light Brownish-grey | Feature 2 | N32 E29 | NW | | | | Red inclusions in quartzite material |
| **6022** | Shatter | Unidentified | 1 | White | Feature 2 | N32 E29 | NW | | | | |
| **6023** | Flake Shatter | Chert | 1 | Pale Yellowish Brown | Feature 2 | N32 E29 | SE | | | | |
| **6024** | Shatter | Quartz | 1 | Very Light Grey | Feature 2 | N32 E29 | SE | | | | |
| **6025** | Scraper | Chert | 1 | Greyish Pink | No | N32 E30 | NW | 52 | 9 | 60 | Other piece of scraper may be present in another unit; used bottom break of the tool as base for measurement |
| **6026** | Utilized Flake | Chert | 1 | Dark Reddish Brown | No | N32 E30 | NE | 59 | 58 | 56 | |
| **6027** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | SE | 6 | 98 | 63 | Platform partly missing |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6028** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | SE | 17 | 86 | 66 | Inclusions present within quartzite |
| **6029** | Flake | Quartz | 1 | Very Light Grey | No | N32 E30 | SW | 11 | 3 | 66 | Inclusion present within quartz |
| **6030** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | SW | 40 | 18 | 56 | Arris line makes the right lateral margin look like a break |
| **6031** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 65 | 32 | 56 | |
| **6032** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 74 | 31 | 59 | Red inclusions in material |
| **6033 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 88 | 50 | 64 | |
| **6033 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 88 | 50 | 64 | |
| **6033 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 88 | 50 | 62 | Red inclusions in flakes 1 and 3 |
| **6033 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | 88 | 50 | 62 | |
| **6034** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E30 | NE | 68 | 32 | 59 | |
| **6035** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 62 | 59 | 56 | Partially broken or chipped at the platform |
| **6036** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E29 | NE | 82 | 68 | 58 | The two pieces were in the same bag; therefore they were weighed together |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6037** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N32 E30 | NE | 62 | 78 | 61 | Three pieces weighed together; Red inclusions present in all 3 pieces |
| **6038** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 70 | 88 | 59 | Red inclusions present |
| **6039** | Flake Shatter | Quartzite | 7 | Pale Yellowish Brown | No | N32 E30 | NE | 77 | 98 | 57 | Weight is reflective of combined weight; Red inclusions present in some material |
| **6040** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N32 E30 | NE | 79 | 89 | 55 | Red inclusions present in material |
| **6041** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E30 | NE | 80 | 93 | 58 | Weight is reflective of combined weight; Red inclusions present |
| **6042** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E30 | NE | 88 | 94 | 57 | Red inclusions in quartzite material |
| **6043 (A)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E30 | NE | 85 | 84 | 57 | It was noted that there were 3 specimens in the bag, but one might have split in two as there were four specimens |
| **6043 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 85 | 84 | 57 | It was noted that there were 3 specimens in the bag, but one might have split in two as there were four specimens |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6043 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 85 | 84 | 57 | It was noted that there were 3 specimens in the bag, but one might have split in two as there were four specimens |
| **6044 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 94 | 97 | 53 | Larger flake of the three had chipped a smaller piece in the bag |
| **6044 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 94 | 97 | 53 | Larger flake of the three had chipped a smaller piece in the bag |
| **6044 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | 94 | 97 | 53 | Larger flake of the three had chipped a smaller piece in the bag |
| **6044 (B)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E30 | NE | 94 | 97 | 53 | |
| **6045 (B)** | Shatter | Mica | 1 | Yellowish Grey | No | N32 E30 | NW | | | | Quad bag mislabelled as N32 E31 (N32 E31 has all quad bags present) |
| **6045 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | | | | Quad bag mislabelled as N32 E31 (N32 E31 has all quad bags present) |
| **6045 (C)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NW | | | | Quad bag mislabelled as N32 E31 (N32 E31 has all quad bags present) |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6046** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | SW | | | | |
| **6047 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E30 | NE | | | | Red inclusions present |
| **6047 (B)** | Flake Shatter | Quartzite | 13 | Pale Yellowish Brown | No | N32 E30 | NE | | | | |
| **6047 (C)** | Shatter | Quartzite | 6 | Pale Yellowish Brown | No | N32 E30 | NE | | | | |
| **6049** | Biface | Quartzite | 1 | Light Brownish-grey | No | N32 E31 | SW | 17 | 47 | 67 | |
| **6050** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NE | 51 | 52 | 63 | |
| **6051 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 33 | 36 | 65 | Possibly a thinning flake based on thin, elongated shape, and small platform |
| **6051 (B)** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown & Brownish Grey | No | N32 E31 | SW | 33 | 36 | 65 | One piece noticeably darker than the others |
| **6052** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 26 | 28 | 58 | Possibly has a second platform present to the right of the primary platform when ventral surface facing viewer |
| **6053 (A)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | SW | 32 | 8 | 62 | Largest piece has an area of discolouration (pale brown) |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6053 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 32 | 8 | 62 | |
| **6054** | Pebble | Quartzite | 1 | Light Brown | No | N32 E31 | SW | 11 | 5 | 60 | Added to catalogue as it was collected and recorded in the field sheets |
| **6055** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 41 | 27 | 62 | Possible utilization of left lateral margin |
| **6056** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 40 | 25 | 62 | No discernable features present to be able to call it flake shatter |
| **6057** | Flake | Quartzite | 1 | Light Brownish-grey | No | N32 E31 | SW | 40 | 25 | 62 | |
| **6058** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 36 | 19 | 60 | Difference in material colour on right ventral margin (red/brown tinge); Red inclusions present |
| **6059** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 38 | 12 | 65 | |
| **6060** | Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | SW | 48 | 28 | 62 | Looks like both were fired based on darker discolouration on dorsal surface |
| **6061** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | SW | 44 | 5 | 62 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6062** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 47 | 13 | 59 | Looks as though tiny piece of platform present at "tip", but not enough to classify as a flake |
| **6063** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 47 | 13 | 59 | |
| **6064 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 44 | 18 | 63 | |
| **6064 (B)** | Flake Shatter | Quartzite | 1 | Light Brownish-grey | No | N32 E31 | SW | 44 | 18 | 63 | Possible portion of platform present, but too small to classify as flake |
| **6065** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 55 | 8 | 62 | Can potentially be classified as a flake as small amount of platform may be present |
| **6066** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 55 | 12 | 59 | |
| **6067** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | NW | 54 | 35 | 60 | |
| **6068** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 55 | 20 | 60 | |
| **6069 (A)** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N32 E31 | NW | 52 | 25 | 56 | Largest piece has a small amount of cortex present; cortex=1 |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6069 (B1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 52 | 25 | 56 | Possible area of utilization on distal margin (inconclusive) |
| **6069 (B2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 52 | 25 | 56 | |
| **6069 (B3)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 52 | 25 | 56 | Largest flake has possible area of utilization on distal margin (inconclusive); cortex on (1) = 3; cortex on other two flakes= 1 |
| **6069 (C)** | Shatter | Quartzite | 1 | Very Pale Orange | No | N32 E31 | NW | 52 | 25 | 56 | |
| **6070** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 66 | 35 | 63 | Fracture on distal end (looked as though it was supposed to be thicker |
| **6070** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 66 | 35 | 63 | |
| **6071** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NE | 78 | 52 | 57 | |
| **6072** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NE | 91 | 54 | 58 | |
| **6073** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 67 | 36 | 62 | |
| **6074** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 73 | 33 | 59 | Tiny amount of cortex present in fracture line on dorsal surface; part of platform may be missing |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6075** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 74 | 38 | 59 | Could potentially argue cortex score is actually 2 |
| **6076** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 73 | 22 | 60 | Inclusions present; part of platform may be missing; prominent bulb of percussion; edges seem brittle; |
| **6077** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 86 | 27 | 56 | |
| **6078 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 74 | 18 | 58 | |
| **6078 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 74 | 18 | 58 | Flake shatter measured as it is a tool |
| **6079 (A)** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 84 | 22 | 51 | Could be a flake off another tool with evidence of retouch from the larger tool; left lateral margin looks serrated (most likely due to natural fracturing) |
| **6079 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 84 | 22 | 51 | |
| **6080 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 72 | 8 | 55 | |
| **6080 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 72 | 8 | 55 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6081** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 92 | 22 | 50 | |
| **6082 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 88 | 15 | 53 | Classified as flake shatter as not enough platform remaining to classify as flake |
| **6082 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 88 | 15 | 53 | Can feel a bulb of percussion to the side of the platform |
| **6083** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | NW | 94 | 14 | 49 | (1) has small amount of red ochre present |
| **6084** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 96 | 11 | 50 | Potentially part of a second platform to left of primary platform (broken area); potential retouch on left lateral margin; small amount of red ochre present |
| **6085** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | NW | 94 | 10 | 53 | |
| **6086** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 88 | 9 | 51 | |
| **6087 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 81 | 4 | 49 | |
| **6087 (B)** | Flake Shatter | Quartzite | 4 | Pale Yellowish Brown | No | N32 E31 | NW | 81 | 4 | 49 | Shatter is numbered 1-4 based on size relative to one another for clarity |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6088 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 74 | 2 | 58 | |
| **6088 (B)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | NW | 74 | 2 | 58 | Cortex for (1)= 3 |
| **6089** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SE | 12 | 98 | 70 | |
| **6090** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SE | 35 | 96 | 71 | Part of platform is present, but not enough to classify as flake |
| **6091** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SE | 30 | 69 | 69 | |
| **6092** | Flake Shatter | Quartzite | 1 | Brownish Grey | No | N32 E31 | NE | 82 | 82 | 61 | |
| **6093** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 15 | 38 | 68 | Darker colour on ventral surface |
| **6094** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 33 | 48 | 69 | |
| **6095** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 40 | 43 | 65 | |
| **6096** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 22 | 4 | 64 | Possibly a secondary decortication flake; inclusions present |
| **6097** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 24 | 8 | 64 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6098** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | 47 | 16 | 59 | |
| **6099 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 84 | 28 | 55 | Not enough platform present to classify as a flake |
| **6099 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | 84 | 28 | 55 | |
| **6100** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NE | 89 | 57 | 54 | |
| **6101 (A)** | Flake Shatter | Quartzite | 16 | Pale Yellowish Brown | No | N32 E31 | NW | | | | |
| **6101 (B1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | | | | Possible thinning or finishing flake |
| **6101 (B2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E32 | NW | | | | Possible thinning or finishing flake |
| **6101 (B3)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | NW | | | | Possible thinning or finishing flake |
| **6102 (C)** | Flake Shatter | Chert | 1 | Greyish Orange Pink | No | N32 E31 | SW | | | | |
| **6102 (A)** | Shatter | Quartzite | 6 | Pale Yellowish Brown | No | N32 E31 | SW | | | | |
| **6102 (B1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | | | | |
| **6102 (B2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6103** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N32 E31 | NE | | | | |
| **6104** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SE | | | | |
| **6105** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E32 | NW | 53 | 6 | 65 | No bulb of percussion present |
| **6106 (A)** | Unhafted Biface fragment | Quartzite | 1 | Pale Yellowish Brown/ Medium Grey | No | N32 E32 | NW | 54 | 4 | 65 | |
| **6106 (B)** | Unhafted Biface fragment | Quartzite | 1 | Pale Yellowish Brown/ Medium Grey | No | N32 E32 | NW | 54 | 4 | 65 | The lateral break was used as the base for measurement |
| **6107** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E32 | NW | 60 | 2 | 63 | |
| **6108** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E32 | NW | 64 | 2 | 63 | |
| **6109** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N32 E32 | NW | | | | |
| **6110** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E28 | SW | 0 | 42 | 50 | Secondary decortication flake? |
| **6111** | Red Ochre | Red Ochre | 1 | Red | No | N33 E28 | | | | | Weight of sample is with the collection bag |
| **6112** | Flake | Chert | 1 | Dark Reddish Brown | No | N33 E28 | NW | 82 | 41 | 41 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6113** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E28 | SE | 8 | 88 | 50 | |
| **6113** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E28 | SE | 8 | 88 | 50 | |
| **6114** | Biface Fragment | Quartz | 3 | Very Light Grey | Feature 2 | N33 E29 | NE | 55 | 53 | 50 | three pieces, but in the form only two were recorded (possibly broke in bag); Refit all three pieces; photo taken when refit |
| **6115** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 27 | 79 | 52 | Inclusions present |
| **6116** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 6 | 79 | 50 | Inclusions present; portion of platform present, but not enough to call a flake |
| **6117** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 28 | 85 | 51 | Inclusions present; part of platform missing |
| **6118 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 11 | 46 | 49 | Inclusions present |
| **6118 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 11 | 46 | 49 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6119** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown & Brownish Grey | Feature 2 | N33 E29 | SW | 7 | 28 | 52 | (1) Unknown portion of flake shatter; red cortex on one margin; possible usewear on other margin (2) Proximal flake as there is a small remnant of platform; possible usewear on one margin (could also be the fracture via striking platform) |
| **6120** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 12 | 22 | 44 | Inclusions present |
| **6121** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 30 | 27 | 44 | |
| **6122** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 32 | 24 | 43 | Curvature on ventral surface; unable to classify as flake due to most of platform missing |
| **6123** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 45 | 98 | 54 | |
| **6124** | Flake Shatter | Slate | 1 | Very Pale Orange | Feature 2 | N33 E29 | NE | 65 | 63 | 54 | Possibly distal portion |
| **6125** | Shatter | Slate | 1 | Dark Yellowish Brown | Feature 2 | N33 E29 | NE | 56 | 57 | 54 | Could potentially argue for cortex=2 |
| **6126** | Flake Shatter | Slate | 1 | Dark Yellowish Brown | Feature 2 | N33 E29 | SE | 39 | 56 | 54 | Possible sign of singular retouch event area on right lateral margin near "top" of triangle shape |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6127** | Scraper | Quartzite | 1 | Dark Yellowish Brown | Feature 2 | N33 E29 | NE | 87 | 63 | 58 | Seems to fit comfortably in one's hand; red ochre staining where one would hold it in order to scrape |
| **6128** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 32 | 88 | 52 | Not enough platform present to classify as a flake |
| **6129** | Utilized Flake | Quartzite | 1 | Dark Yellowish Brown | Feature 2 | N33 E29 | SW | 37 | 23 | 51 | |
| **6130 (A)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | Feature 2 | N33 E29 | NE | 55 | 86 | 52 | No mentions of two pieces in 18(a) but smaller piece chipped during brushing; Technically three pieces but catalogued as two; There were two artifact bags labelled 18, labelled this as 18(A) and other as 18(B) |
| **6130 (B)** | Flake | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | NE | 55 | 86 | 52 | There are two bags labelled 18 but not mentioned on the excavation forms. This bag has been labelled 18(B) |
| **6131** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | NW | 74 | 50 | 49 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6132** | Flake | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | NW | 73 | 29 | 43 | Potential signs of retouch on distal margin or just natural fracture (inconclusive); flake taken off of dorsal side |
| **6133** | Flake Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 10 | 49 | 51 | |
| **6134** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown/ Pale Brown | Feature 2 | N33 E29 | SW | 23 | 49 | 50 | No mention of 3 pieces in the bag or catalogue; One piece possibly belongs to largest piece in bag (2); (3) has part of a platform (broken), but it's not enough to classify as flake |
| **6135** | Flake Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 15 | 45 | 50 | |
| **6136** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 16 | 33 | 53 | Inclusions present; small piece of platform may be missing |
| **6137** | Flake Shatter | Quartzite | 2 | Pale Brown | Feature 2 | N33 E29 | SW | 17 | 16 | 54 | (2) 1 margin break looks like a platform; platform is missing but noticeable bulb of percussion present |
| **6138** | Flake Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 23 | 25 | 51 | Platform noticeably broken, therefore classified as flake shatter |
| **6139** | Utilized Flake | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 21 | 7 | 48 | No mention of 2 pieces in the bag (may have broke while in bag); refit together; measurements taken when pieces were refit |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6140** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 26 | 25 | 44 | |
| **6141 (A)** | Core | Quartzite | 2 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 23 | 17 | 48 | Weight is of the two pieces together |
| **6141 (B)** | Preform Fragment | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 23 | 17 | 48 | Charcoal and red ochre present in the artifact bag still |
| **6142** | Biface | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 36 | 22 | 48 | Prominent crack present on both sides |
| **6143** | Flake Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N33 E29 | SW | 21 | 8 | 47 | Potentially distal portion |
| **6144** | Flake | Quartzite | 1 | Dark Yellowish Brown | Feature 2 | N33 E29 | SW | 18 | 10 | 55 | Potential previous flake scar present on dorsal surface |
| **6145** | Shatter | Quartz | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 49 | 35 | 47 | Colour varies in areas |
| **6146** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SW | 20 | 17 | 47 | Inclusions present |
| **6147** | Core | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E29 | SE | 23 | 90 | 51 | At least 3 flakes have been detached; Length taken from rounded edge to broken end |
| **6148** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown & Dark Yellowish Brown | Feature 2 | N33 E29 | SE | 18 | 54 | 51 | (1) Inclusions present |
| **6149 (A)** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 85 | 87 | 54 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6149 (B)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 85 | 87 | 58 | |
| **6150** | Flake Shatter | Quartzite | 2 | Light Olive Grey | Feature 2 | N33 E30 | NE | 72 | 87 | 58 | |
| **6151** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 98 | 68 | 55 | |
| **6152** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NW | 70 | 49 | 59 | |
| **6153** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 87 | 52 | 53 | |
| **6154** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 13 | 89 | 64 | |
| **6155** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 28 | 83 | 55 | |
| **6156** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | SE | 40 | 97 | 53 | |
| **6157** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 5 | 72 | 56 | |
| **6158** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 13 | 73 | 52 | |
| **6159** | Flake Shatter | Quartzite | 2 | light Olive Grey and Pinkish Grey | Feature 2 | N33 E30 | SE | 18 | 71 | 55 | |
| **6160 (A)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 12 | 66 | 53 | 2 specimens in original bag- Separated by class |
| **6160 (B)** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 12 | 66 | 53 | |
| **6161 (A)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 15 | 64 | 58 | Original bag had 5 specimens; Separated flakes out into separate bags |
| **6161 (B)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 15 | 64 | 58 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6161 (C)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 15 | 64 | 58 | |
| **6161 (D)** | Flake Shatter | Quartzite | 2 | Light Olive Grey | Feature 2 | N33 E30 | SE | 15 | 64 | 58 | |
| **6162 (A)** | Flake Shatter | Quartzite | 4 | Light Olive Grey | Feature 2 | N33 E30 | SE | 18 | 65 | 58 | Original bag had 5 specimens- Separated by class |
| **6162 (B)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 18 | 65 | 58 | |
| **6163 (A)** | Flake Shatter | Quartzite | 2 | Light Grey | Feature 2 | N33 E30 | SE | 24 | 63 | 56 | 3 specimens in bag- separated into classes |
| **6163 (B)** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | SE | 24 | 63 | 56 | |
| **6164** | Flake Shatter | Quartzite | 1 | Light Grey | Feature 2 | N33 E30 | SW | 42 | 41 | 55 | |
| **6165** | Flake Shatter | Quartzite | 1 | Light Grey | Feature 2 | N33 E30 | SW | 36 | 33 | 50 | Could be mistaken for Ramah chert |
| **6166** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | SW | 40 | 29 | 53 | |
| **6167** | Flake Shatter | Chert | 2 | Medium Bluish Grey, Light Grey, and White Specks | Feature 2 | N33 E30 | SW | 43 | 29 | 53 | Light specks and banding present on specimen |
| **6168** | Flake | Quartzite | 1 | Pale Olive | Feature 2 | N33 E30 | SE | 14 | 57 | 56 | |
| **6169** | Shatter | Quartzite | 1 | Olive Grey | Feature 2 | N33 E30 | SE | 16 | 75 | 54 | |
| **6170** | Flake Shatter | Quartzite | 1 | Olive Grey | Feature 2 | N33 E30 | NW | 54 | 36 | 52 | |
| **6171** | Utilized Flake | Quartzite | 1 | Olive Grey | Feature 2 | N33 E30 | NE | 79 | 88 | 48 | |
| **6172** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 90 | 79 | 47 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6173** | Flake Shatter | Quartzite | 2 | Light Olive Grey | Feature 2 | N33 E30 | NE | 97 | 57 | 38 | 2 specimens in the same bag |
| **6174** | Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 86 | 63 | 50 | Spots of red ochre present on ventral surface |
| **6175 (A)** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 98 | 76 | 50 | |
| **6175 (B)** | Utilized Flake | Quartzite | 1 | Light Olive Grey | Feature 2 | N33 E30 | NE | 98 | 76 | 50 | |
| **6102 (B2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N32 E31 | SW | | | | |
| **6176** | Flake | Chert | 1 | Brownish Black | Feature 2 | N33 E30 | SE | | | | |
| **6177** | Flake Shatter | Quartzite | 5 | Pale Yellowish Brown | Feature 2 | N33 E30 | SE | | | | |
| **6178 (1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | SE | | | | Microdebitage |
| **6179** | Flake Shatter | Chert | 14 | Blackish Red | Feature 2 | N33 E30 | NE | | | | Was in a catalogued bag with quartzite and other colour chert. Separated by material and colour by Scott Neilsen |
| **6180** | Flake Shatter | Chert | 29 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | Was in a catalogued bag with quartzite and other colour chert. Separated by material and colour |
| **6181** | Flake Shatter | Quartzite | 11 | Grey & Pale Brownish Grey | Feature 2 | N33 E30 | NE | | | | Separated these into two bags to quantify chert and quartzite; updated weight, quantity, and colour |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6178 (2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | SE | | | | Microdebitage |
| **6178 (3)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | SE | | | | Microdebitage |
| **6182 (1)** | Flake | Quartzite | 1 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | NE | | | | |
| **6183 (4)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |
| **6183 (5)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |
| **6183 (6)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |
| **6183 (7)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |
| **6183 (8** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |
| **6184** | Flake Shatter | Quartzite | 12 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | NW | | | | |
| **6185** | Shatter | Quartzite | 1 | Light Grey | Feature 2 | N33 E30 | NW | | | | |
| **6183 (9)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N33 E30 | NE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6187 (1)** | Flake | Quartzite | 1 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | SW | | | | |
| **6187 (2)** | Flake | Quartzite | 1 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | SW | | | | |
| **6187 (3)** | Flake | Quartzite | 1 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | SW | | | | |
| **6188** | Flake Shatter | Quartzite | 4 | Light Grey - Light Brownish Grey | Feature 2 | N33 E30 | SW | | | | |
| **6189** | Pebble | Quartzite | 1 | Moderate Reddish Brown | Feature 2 | N33 E30 | SW | | | | |
| **6190** | Shatter | Quartzite | 3 | mixed | Feature 2 | N33 E30 | NE | | | | |
| **6191** | Red Ochre | Red Ochre | 1 | Reddish Brown | Feature 2 | N33 E30 | NE | | | | |
| **6192** | Utilized Flake Shatter | Quartzite | 1 | Dark Yellowish Brown | Feature 2 | N33 E30 | NW | | | | Half of platform missing |
| **6193** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N33 E30 | NW | | | | Possible retouch on right lateral margin |
| **6194 (B)** | Flake Shatter | Chert | 2 | Moderate Red | Feature 2 | N33 E30 | NE | | | | Smaller piece may have come off larger piece while in the bag |
| **6194 (D)** | Shatter | Chert | 1 | Pale Brown | Feature 2 | N33 E30 | NE | | | | |
| **6194 (A)** | Flake Shatter | Quartzite | 4 | Pale Yellowish Brown | Feature 2 | N33 E30 | NE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6194 (C)** | Red Ochre | Red Ochre | 1 | Moderate Reddish Brown | Feature 2 | N33 E30 | NE | | | | |
| **6195 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 3 | 83 | 56 | |
| **6195 (B)** | Flake Shatter | Quartzite | 1 | Pinkish Grey | No | N33 E31 | SE | 3 | 83 | 56 | Noticeable pinkish area on ventral surface, remnants of red ochre staining? |
| **6196 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 13 | 81 | 54 | Part of right lateral margin a lighter colour than the rest of the flake |
| **6196 (B)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N33 E31 | SE | 13 | 81 | 54 | |
| **6197 (A)** | Flake | Quartzite | 1 | Pinkish Grey | No | N33 E31 | SW | 0 | 49 | 57 | Slight pink tinge |
| **6197 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 0 | 49 | 57 | Slight pink tinge |
| **6198** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 17 | 69 | 50 | |
| **6199** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 15 | 60 | 56 | |
| **6200** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 16 | 55 | 52 | |
| **6201** | Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N33 E31 | SE | 20 | 60 | 51 | Dark- coloured circle present on one surface |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6202** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 26 | 63 | 49 | |
| **6203** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | 37 | 61 | 46 | |
| **6204** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 15 | 49 | 48 | |
| **6205 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 32 | 48 | 52 | |
| **6205 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 32 | 48 | 52 | |
| **6206** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N33 E31 | SW | 28 | 43 | 54 | |
| **6207** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 22 | 32 | 53 | |
| **6208 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 7 | 21 | 52 | Possible retouch on left lateral margin |
| **6208 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 7 | 21 | 52 | |
| **6209 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 9 | 17 | 51 | |
| **6209 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | 9 | 17 | 51 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6210** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown/ Light Brownish Grey | No | N33 E31 | SW | 26 | 17 | 51 | |
| **6211** | Flake Shatter | Quartzite | 1 | Dark Yellowish Brown | No | N33 E31 | SW | 31 | 18 | 51 | |
| **6212** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SW | | | 0.2 | |
| **6213** | Flake Shatter | Quartzite | 1 | Brownish Grey & Pinkish Grey | No | N33 E31 | NW | 62 | 46 | 47 | Signs of being fired (brownish grey colour on ventral side |
| **6214** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 59 | 36 | 48 | |
| **6215** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 73 | 37 | 52 | |
| **6216** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 73 | 41 | 51 | |
| **6217** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 93 | 47 | 52 | |
| **6218** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 56 | 11 | 53 | |
| **6219** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NW | 71 | 11 | 51 | Part of platform may be missing |
| **6220** | Flake Shatter | Quartzite | 1 | Pale Brown | No | N33 E31 | NW | 76 | 13 | 50 | Red ochre present on ventral surface |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6221** | Flake Shatter | Quartzite | 1 | Yellowish Grey | No | N33 E31 | NW | 60 | 10 | 48 | Red ochre present on dorsal surface |
| **6222 (D)** | Flake Shatter | Chert | 1 | Pale Red | No | N33 E31 | SW | | | | Spot of red ochre present |
| **6223 (B3)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | SE | | | | |
| **6224 (B)** | Flake Shatter | Chert | 7 | Greyish Red | No | N33 E31 | SE | | | | |
| **6224 (C1)** | Flake | Chert | 1 | Dark Greenish Grey | No | N33 E31 | SE | | | | |
| **6224 (C2)** | Flake | Chert | 1 | Greyish Red | No | N33 E31 | SE | | | | |
| **6224 (C3)** | Flake | Chert | 1 | Greyish Red | No | N33 E31 | SE | | | | |
| **6224 (A)** | Flake Shatter | Quartzite | 5 | Pale Yellowish Brown | No | N33 E31 | SE | | | | |
| **6225 (A)** | Flake Shatter | Quartzite | 6 | Pale Yellowish Brown | No | N33 E31 | NE | | | | |
| **6225 (B1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NE | | | | |
| **6225 (B2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E31 | NE | | | | |
| **6226** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N33 E32 | SW | 21 | 6 | 56 | |
| **6227** | Shatter | Quartzite | 1 | Very Pale Orange | No | N33 E32 | SW | 18 | 15 | 56 | |
| **6228** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N33 E32 | SW | 25 | 7 | 56 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6229** | Flake Shatter | Quartzite | 5 | Pale Yellowish Brown | No | N33 E32 | SW | | | | |
| **6230** | Flake Shatter | Quartzite | 4 | Pale Yellowish Brown | No | N33 E32 | | | | | |
| **6231** | Flake | Quartzite | 3 | Pale Brown | No | N33 E32 | | | | | |
| **6232** | Flake | Quartz | 1 | White | No | N33 E33 | NW | 51 | 38 | 61 | Colour identified via Munsell colour chart |
| **6233** | Shatter | Quartz | 1 | Yellowish Grey | No | N33 E33 | NW | 59 | 45 | 61 | Colour varies from white in some areas to very pale orange in others |
| **6234** | Flake | Quartz | 1 | White | No | N33 E33 | NE | 61 | 60 | 64 | Colour varies from white in some areas to very pale orange in others |
| **6235** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | SE | 35 | 96 | 51 | |
| **6236** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | SE | 49 | 84 | 45 | There are other green coloured specimens. The bag was open before realizing the colour |
| **6237** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NE | 54 | 91 | 51 | |
| **6238** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NE | 62 | 64 | 51 | |
| **6239** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NE | 60 | 77 | 48 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6240** | Flake Shatter | Slate | 1 | Very Pale Orange | Feature 2 | N34 E29 | NE | 84 | 92 | 49 | |
| **6241** | Shatter | Unidentified | 1 | Grey with Green | Feature 2 | N34 E29 | NE | 52 | 77 | 49 | The specimen was weighed in the bag; weight of bag subtracted from total weight; the bag was not opened |
| **6242** | Shatter | Unidentified | 1 | Grey | Feature 2 | N34 E29 | NW | 88 | 23 | 46 | The specimen was weighed in the bag; weight of bag subtracted from total weight; the bag was not opened |
| **6243** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | SW | 36 | 28 | 45 | Platform looks like it shattered (based on the area where the platform should be located) |
| **6244** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NE | 88 | 65 | 51 | The specimen was weighed in the bag; weight of bag subtracted from total weight; the bag was opened with tweezers before realizing there was red ochre; measurements taken while in bag |
| **6245** | Hammerstone | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NW | 76 | 33 | 49 | Length was taken from "top point" to impact area (Ex. North to South); Width was taken from one side to another (ex. West to East) |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6246** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E29 | NE | 73 | 54 | 54 | Red ochre present closer to distal end |
| **6247** | Red Ochre | Red Ochre | 1 | Reddish Brown | Feature 2 | N34 E29 | | | | | No collection method or Northing and Easting as it was stated on excavation form the red ochre was "almost all from Northern quads"; red ochre was weighed in the bag and not opened |
| **6248 (A)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N34 E29 | NW | | | | |
| **6248 (B)** | Shatter | Unidentifi-ed | 1 | Moderate Orange Pink | Feature 2 | N34 E29 | NW | | | | Some pieces flaked off while brushing |
| **6249** | Shatter | Quartzite | 1 | Pale Reddish Brown | Feature 2 | N34 E29 | NE | | | | |
| **6250 (B)** | Flake Shatter | Chert | 5 | Pale Red | Feature 2 | N34 E29 | NE | | | | All pieces originally catalogued as one group; I changed this and grouped them by material, colour, etc (Ashley Cameron) |
| **6250 (C)** | Flake Shatter | Chert | 1 | Blackish Red | Feature 2 | N34 E29 | NE | | | | All pieces originally catalogued as one group; I changed this and grouped them by material, colour, etc (Ashley Cameron) |
| **6250 (D1)** | Flake | Chert | 1 | Pale Red | Feature 2 | N34 E29 | NE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6250 (D2)** | Flake | Chert | 1 | Pale Red | Feature 2 | N34 E29 | NE | | | | All pieces originally catalogued as one group; I changed this and grouped them by material, colour, etc (Ashley Cameron) |
| **6250 (A)** | Flake Shatter | Quartzite | 2 | Yellowish Grey | Feature 2 | N34 E29 | NE | | | | All pieces originally catalogued as one group; I changed this and grouped them by material, colour, etc (Ashley Cameron) |
| **6251** | Flake | Chert | 1 | Greyish Red | Feature 2 | N34 E29 | SW | | | | |
| **6252** | Flake Shatter | Unidentifi-ed | 2 | Medium Dark Grey | Feature 2 | N34 E29 | SE | | | | |
| **6253 (1)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N34 E29 | SE | | | | |
| **6253 (2)** | Flake | Chert | 1 | Greyish Orange Pink | Feature 2 | N34 E29 | SE | | | | |
| **6254** | Red Ochre | Red Ochre | 1 | Dusky Red | Feature 2 | N34 E28 | NE | | | | Bag wasn't opened; took weight of red ochre and bag together and subtracted that by weight of bag itself |
| **6255** | Flake | Quartzite | 1 | Dark Yellowish Brown | No | N34 E31 | NE | 54 | 84 | 56 | |
| **6256** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N34 E31 | SW | 49 | 48 | 58 | |
| **6257** | Uniface | Chert | 1 | Moderate Red | Feature 1 | N34 E32 | NE | 83 | 91 | 55 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6258** | Flake | Quartz | 1 | Very Light Grey | Feature 1 | N34 E32 | NE | 89 | 95 | 55 | |
| **6259** | Flake | Slate | 1 | Pale Yellowish Brown | Feature 1 | N34 E32 | NE | 98 | 96 | 49 | Hearth area; atop stone; shovel/trowel mark on dorsal surface |
| **6260** | Shatter | Quartzite | 1 | Greyish Red | Feature 1 | N34 E32 | NE | 74 | 62 | 54 | |
| **6261** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N34 E32 | NE | 75 | 68 | 54 | |
| **6262** | Flake Shatter | Quartzite | 1 | Light Brownish Grey | Feature 1 | N34 E32 | NE | 77 | 64 | 55 | |
| **6263** | Flake | Chert | 1 | Moderate Red | Feature 1 | N34 E32 | NW | 84 | 8 | 54 | |
| **6264** | Flake Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N34 E32 | NW | 75 | 21 | 47 | Found atop a rock |
| **6265** | Flake Shatter | Slate | 2 | Very Pale Orange | Feature 1 | N34 E32 | NW | 57 | 40 | 58 | |
| **6266** | Shatter | Slate | 3 | Pale Yellowish Brown | Feature 1 | N34 E32 | NE | 62 | 54 | 53 | Was collected as slate is not very common on site |
| **6267** | Flake | Chert | 1 | Pale Red | Feature 1 | N34 E32 | NW | 99 | 48 | 46 | In hearth |
| **6268** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N34 E32 | NW | 83 | 46 | 53 | |
| **6269** | Flake | Quartzite | 1 | Greyish Brown | Feature 1 | N34 E32 | NE | 100 | 60 | 40 | Area on dorsal surface chipped- post depositional? |
| **6270** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N34 E32 | NE | 99 | 93 | 32 | |
| **6271** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | Feature 1 | N34 E32 | NW | 96 | 5 | 52 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6272 (B)** | Shatter | Chert | 1 | Blackish Red | Feature 1 | N34 E32 | NE | | | | |
| **6272 (A)** | Flake Shatter | Quartzite | 4 | Brownish Grey | Feature 1 | N34 E32 | NE | | | | |
| **6273** | Flake Shatter | Chert | 6 | Moderate Red | Feature 1 | N34 E32 | SE | | | | |
| **6274 (A)** | Flake Shatter | Chert | 4 | Moderate Orange Pink | Feature 1 | N34 E33 | SW | | | | Two SW quad artifact bags were combined |
| **6274 (B)** | Flake Shatter | Quartz | 1 | Clear | Feature 1 | N34 E33 | SW | | | | Two SW quad artifact bags were combined |
| **6275 (A)** | Flake Shatter | Chert | 7 | Greyish Red | Feature 1 | N34 E33 | NW | | | | |
| **6275 (B)** | Flake | Chert | 1 | Pale Reddish Brown | Feature 1 | N34 E33 | NW | | | | |
| **6275 (C)** | Flake Shatter | Quartzite | 1 | Light Brownish Grey | Feature 1 | N34 E33 | NW | | | | |
| **6276** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N34 E34 | NW | 56 | 6 | 56 | |
| **6277** | Flake Shatter | Quartzite | 1 | Pale Red | No | N35 E28 | SW | 39 | 49 | 32 | Most likely retouch pressure flake shatter |
| **6278** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E29 | NE | 88 | 73 | 41 | |
| **6279** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E29 | SE | 6 | 77 | 52 | |
| **6280** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E29 | SW | 3 | 42 | 56 | |
| **6281** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E29 | SE | 25 | 60 | 44 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6282** | Cobble Fragment | Chert | 1 | Greyish Orange | No | N35 E29 | SE | 14 | 66 | 48 | |
| **6283** | Flake | Quartzite | 1 | Pale Brown | Feature 2 | N34 E30 | NE | 87 | 78 | 49 | |
| **6284** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | NE | 90 | 59 | 48 | |
| **6285** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | NE | 89 | 50 | 48 | |
| **6286** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | NW | 88 | 27 | 48 | Unsure of platform presence |
| **6287** | Shatter | Quartzite | 3 | Pale Red | Feature 2 | N34 E30 | NW | 81 | 25 | 49 | Difficult to determine if the refit; possibly heated treated (FCR) |
| **6288** | Flake Shatter | Quartzite | 1 | Pale Red | Feature 2 | N34 E30 | NW | 82 | 15 | 49 | |
| **6289** | Point Base | Chert | 1 | Dusky Red | Feature 2 | N34 E30 | NW | 100 | 2 | 47 | |
| **6290** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 29 | 95 | 49 | Was originally catalogued as flake shatter, this was changed as no discernible flake features present |
| **6291** | Flake | Quartzite | 1 | Greyish Orange Pink & Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 9 | 71 | 49 | |
| **6292** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 8 | 60 | 42 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6293** | Red Ochre | Red Ochre | 1 | Red | Feature 2 | N34 E30 | SE | 24 | 83 | 48 | Red ochre was weighed while still in original bag (an empty bag was weighed and that amount was subtracted from total of bag and red ochre together) |
| **6294** | Red Ochre | Red Ochre | 1 | Red | Feature 2 | N34 E30 | SE | 8 | 90 | 48 | Red ochre was weighed while still in original bag (an empty bag was weighed and that amount was subtracted from total of bag and red ochre together) |
| **6295** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 31 | 100 | 50 | |
| **6296** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | 3 | 36 | 41 | |
| **6297** | Shatter | Quartzite | 1 | Moderate Red | Feature 2 | N34 E30 | SW | 33 | 1 | 43 | |
| **6298** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | NE | 65 | 77 | 50 | |
| **6299** | Shatter | Quartzite | 1 | Light Brownish Grey | Feature 2 | N34 E30 | SE | 7 | 82 | 49 | |
| **6300** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 32 | 56 | 45 | |
| **6301 (A)** | Shatter | Quartzite | 1 | Light Brownish Grey | Feature 2 | N34 E30 | SE | 6 | 89 | 54 | |
| **6301 (B)** | Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N34 E30 | SE | 6 | 89 | 54 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6302 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 12 | 82 | 54 | Possible red ochre present |
| **6302 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 12 | 82 | 54 | |
| **6303** | Flake | Quartzite | 1 | Greyish Brown | Feature 2 | N34 E30 | SE | 6 | 80 | 54 | |
| **6304** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 4 | 63 | 53 | All three pieces refit |
| **6305** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 8 | 64 | 50 | |
| **6306** | Biface Fragment | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 3 | 59 | 48 | |
| **6307 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 8 | 59 | 47 | Unable to discern what portion of flake is present, but does have visible flake characteristics |
| **6307 (B)** | Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N34 E30 | SE | 8 | 59 | 47 | |
| **6308** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 14 | 58 | 48 | |
| **6309 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 20 | 55 | 50 | |
| **6309 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | 20 | 55 | 50 | |
| **6310** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | 19 | 48 | 49 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6311** | Flake Shatter | Quartzite | 1 | Moderate Yellow Brown | Feature 2 | N34 E30 | SW | 27 | 47 | 55 | |
| **6312** | Utilized Flake | Chert | 1 | Dark Yellowish Brown | Feature 2 | N34 E30 | SW | 7 | 29 | 55 | |
| **6313** | Biface Fragment | Quartz | 1 | White | Feature 2 | N34 E30 | SW | 12 | 33 | 52 | Try to find another piece to refit |
| **6314** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | 18 | 30 | 52 | |
| **6315** | Pestle Fragment | Unidentifi-ed | 1 | Mixed darker colours | Feature 2 | N34 E30 | SW | 48 | 38 | 54 | Try to find another piece to refit; difficult to measure, therefore photographs may be a better way to record |
| **6316** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | 7 | 23 | 55 | |
| **6317 (C)** | Flake Shatter | Chert | 4 | Moderate Pink | Feature 2 | N34 E30 | SE | | | | |
| **6317 (D)** | Flake Shatter | Chert | 1 | Greyish Red | Feature 2 | N34 E30 | SE | | | | |
| **6317 (A1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | | | | |
| **6317 (A2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | | | | |
| **6317 (A3)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | | | | |
| **6317 (A4)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6317 (B)** | Flake Shatter | Quartzite | 4 | Pale Yellowish Brown | Feature 2 | N34 E30 | SE | | | | |
| **6318 (G)** | Flake Shatter | Chert | 2 | Dusky Red | Feature 2 | N34 E30 | SW | | | | |
| **6318 (I)** | Shatter | Chert | 1 | Moderate Yellow Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (N)** | Flake Shatter | Chert | 6 | Dusky Red | Feature 2 | N34 E30 | SW | | | | Extensions L to Q were in the same bag initially. I sorted them accordingly |
| **6318 (A)** | Shatter | Quartzite | 2 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (B)** | Shatter | Quartzite | 2 | Greyish Red | Feature 2 | N34 E30 | SW | | | | |
| **6318 (C)** | Flake | Quartzite | 1 | Moderate Yellow Brown | Feature 2 | N34 E30 | SW | | | | A piece of the distal portion broke off during analysis |
| **6318 (D)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (E)** | Flake Shatter | Quartzite | 2 | Light Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (F)** | Shatter | Quartzite | 1 | Pale Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (H)** | Shatter | Quartzite | 1 | Dark Yellowish Brown | Feature 2 | N34 E30 | SW | | | | |
| **6318 (J)** | Flake Shatter | Quartzite | 2 | Greyish Red | Feature 2 | N34 E30 | SW | | | | |
| **6318 (K)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6318 (L)** | Flake Shatter | Quartzite | 10 | Light Grey | Feature 2 | N34 E30 | SW | | | | Extensions L to Q were in the same bag initially. I sorted them accordingly; Material looks like Ramah chert |
| **6318 (M)** | Flake | Quartzite | 1 | Light Grey | Feature 2 | N34 E30 | SW | | | | Extensions L to Q were in the same bag initially. I sorted them accordingly; Material looks like Ramah chert |
| **6318 (O)** | Flake Shatter | Quartzite | 8 | Pale Yellowish Brown | Feature 2 | N34 E30 | SW | | | | Extensions L to Q were in the same bag initially. I sorted them accordingly |
| **6318 (P)** | Flake Shatter | Quartzite | 7 | Greyish Red | Feature 2 | N34 E30 | SW | | | | Extensions L to Q were in the same bag initially. I sorted them accordingly |
| **6319 (C)** | Flake Shatter | Chert | 1 | Greyish Purple | Feature 2 | N34 E30 | NW | | | | Accidentally skipped over letter A when cataloguing |
| **6319 (D)** | Flake | Chert | 1 | Dusky Red | Feature 2 | N34 E30 | NW | | | | Accidentally skipped over letter A when cataloguing |
| **6319 (E)** | Flake Shatter | Chert | 1 | Dusky Red | Feature 2 | N34 E30 | NW | | | | Accidentally skipped over letter A when cataloguing |
| **6319 (B)** | Flake Shatter | Quartzite | 3 | Light Grey | Feature 2 | N34 E30 | NW | | | | Accidentally skipped over letter A when cataloguing; Looks like Ramah chert |
| **6320** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SE | 10 | 84 | 47 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6321** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NE | 52 | 72 | 48 | Platform partly missing |
| **6322** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NE | 78 | 66 | 45 | |
| **6323** | Utilized Flake | Quartzite | 1 | Brownish Grey | No | N35 E30 | NE | 62 | 63 | 48 | |
| **6324** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NW | 62 | 46 | 49 | |
| **6325** | Flake Shatter | Quartzite | 1 | Brownish Grey | No | N35 E30 | SW | 12 | 38 | 48 | |
| **6326** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 16 | 37 | 52 | |
| **6327** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 25 | 37 | 52 | |
| **6328** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N35 E30 | SW | 47 | 32 | 47 | Record form noted four pieces of quartzite, but only three present in artifact bag |
| **6329** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 18 | 16 | 47 | |
| **6330** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 24 | 16 | 46 | |
| **6331** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 29 | 18 | 49 | |
| **6332** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 48 | 24 | 47 | Catalogued as shatter as no discernable flake characteristics present |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6333** | Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N35 E30 | NW | 52 | 25 | 46 | |
| **6334** | Shatter | Quartz | 1 | Yellowish Grey | No | N35 E30 | NW | 70 | 8 | 43 | |
| **6335** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 10 | 44 | 52 | |
| **6336** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 23 | 44 | 52 | |
| **6337** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SW | 8 | 3 | 53 | |
| **6338** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N35 E30 | SW | 33 | 16 | 49 | |
| **6339** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | SE | 33 | 89 | 51 | |
| **6340 (A)** | Flake | Quartzite | 1 | Light Brownish Grey | No | N35 E30 | NW | 91 | 3 | 45 | |
| **6340 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NW | 91 | 3 | 45 | |
| **6341 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NW | 94 | 9 | 45 | |
| **6341 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E30 | NW | 94 | 9 | 45 | |
| **6342 (A)** | Flake Shatter | Chert | 8 | Greyish Red | No | N35 E30 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6342 (B)** | Flake | Chert | 1 | Greyish Red | No | N35 E30 | SW | | | | |
| **6342 (C)** | Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N35 E30 | SW | | | | |
| **6342 (D)** | Flake Shatter | Quartzite | 9 | Pale Yellowish Brown | No | N35 E30 | SW | | | | |
| **6343** | Flake | Chert | 1 | Moderate Orange Pink | Feature 1 | N36 E32 | SE | 17 | 95 | 52 | |
| **6344** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N36 E32 | SE | 32 | 90 | 33 | |
| **6345** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N36 E32 | NW | 84 | 19 | 45 | Indirect contact with flake shatter via tweezers |
| **6346** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N36 E32 | SW | 18 | 43 | 48 | |
| **6347 (A1)** | Flake | Chert | 1 | Moderate Orange Pink | Feature 1 | N36 E32 | SW | | | | Flake too brittle to measure accurately |
| **6347 (A2)** | Flake | Chert | 1 | Moderate Orange Pink | Feature 1 | N36 E32 | SW | | | | Flake too brittle to measure accurately |
| **6347 (E)** | Flake Shatter | Quartz | 1 | White | Feature 1 | N36 E32 | SW | | | | Indirect contact with flake shatter via tweezers |
| **6347 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N36 E32 | SW | | | | |
| **6347 (C)** | Flake Shatter | Quartzite | 1 | Greyish Red | Feature 1 | N36 E32 | SW | | | | |
| **6347 (D)** | Flake Shatter | Quartzite | 1 | Pale Brown | Feature 1 | N36 E32 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6348 (A)** | Flake Shatter | Chert | 5 | Moderate Pink | No | N36 E31 | SE | 2 | 73 | 50 | |
| **6348 (B)** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SE | 2 | 72 | 50 | |
| **6349** | Flake Shatter | Quartz | 1 | White | No | N36 E31 | SE | 11 | 67 | 51 | |
| **6350** | Red Ochre | Red Ochre | 3 | Dark Reddish Brown | No | N36 E31 | NE | 52 | 81 | 51 | |
| **6351** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SW | 32 | 38 | 37 | |
| **6352 (A)** | Flake | Chert | 1 | Dusky Red | No | N36 E31 | NW | | | | |
| **6352 (C)** | Flake Shatter | Quartz | 1 | White | No | N36 E31 | NW | | | | |
| **6352 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E31 | NW | | | | |
| **6353 (C)** | Flake | Chert | 1 | Moderate Pink & Greyish Red | No | N36 E31 | NE | | | | |
| **6353 (B)** | Flake | Quartz | 1 | White | No | N36 E31 | NE | | | | Indirect contact with flake via tweezers |
| **6353 (A)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N36 E31 | NE | | | | |
| **6354** | Red Ochre | Red Ochre | 1 | Moderate Reddish Brown | No | N36 E31 | SW | | | | Indirect contact with sample via tweezers |
| **6355 (A1)** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SW | | | | |
| **6355 (A2)** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SW | | | | |
| **6355 (B)** | Flake | Chert | 1 | Moderate Red | No | N36 E31 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6355 (E)** | Flake Shatter | Quartz | 1 | White | No | N36 E31 | SW | | | | |
| **6355 (C1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E31 | SW | | | | |
| **6355 (C2)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E31 | SW | | | | |
| **6355 (D)** | Flake Shatter | Quartzite | 1 | Greyish Purple | No | N36 E31 | SW | | | | |
| **6356 (C1)** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SE | | | | 1 small piece of flake shatter also present, but it's associated with one of the flakes (broke in bag?) |
| **6356 (C2)** | Flake | Chert | 1 | Moderate Pink | No | N36 E31 | SE | | | | |
| **6356 (A)** | Flake | Quartzite | 1 | Moderate Brown | No | N36 E31 | SE | | | | |
| **6356 (B)** | Flake Shatter | Quartzite | 1 | Very Pale Orange | No | N36 E31 | SE | | | | Break looks comparable to a platform; most likely a thinning flake |
| **6356 (D)** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | No | N36 E31 | SE | | | | Indirect contact with sample via tweezers |
| **6357** | Sample | Unidentified | 1 | Mixed | Feature 1 | N35 E32 | SE | 22 | 69 | 34 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6358** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N35 E32 | SE | 34 | 77 | 47 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6359** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N35 E32 | SE | 41 | 57 | 47 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6360** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | SE | 35 | 71 | 45 | |
| **6361** | Flake | Quartzite | 1 | Greyish Purple | Feature 1 | N35 E32 | NW | 59 | 42 | 51 | |
| **6362** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | NW | 68 | 39 | 51 | |
| **6363** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N35 E32 | NW | 75 | 31 | 49 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6364** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N35 E32 | NE | 98 | 84 | 50 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6365** | Flake | Quartzite | 1 | Dark Yellowish Brown | Feature 1 | N35 E32 | SE | 27 | 92 | 46 | |
| **6366** | Flake Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E32 | SE | 32 | 90 | 46 | |
| **6367** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | SW | 9 | 32 | 48 | |
| **6368** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | SW | 14 | 22 | 50 | Direct contact with the specimen |
| **6369** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | SW | 24 | 5 | 54 | |
| **6370 (B)** | Flake Shatter | Quartz | 1 | White | Feature 1 | N35 E32 | SW | 28 | 0 | 52 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6370 (A)** | Flake Shatter | Quartzite | 1 | Dark Yellowish Brown | Feature 1 | N35 E32 | SW | 28 | 0 | 52 | |
| **6371** | Utilized Flake | Quartz | 1 | White | Feature 1 | N35 E32 | SW | 4 | 19 | 48 | Possibly bifacial |
| **6372** | Flake | Chert | 1 | Pale Reddish Brown | Feature 1 | N35 E32 | SW | 31 | 28 | 53 | Caution when handling as is slightly brittle |
| **6373** | Flake | Chert | 1 | Moderate Red | Feature 1 | N35 E32 | NE | | | | |
| **6374 (A)** | Flake Shatter | Chert | 1 | Moderate Pink | Feature 1 | N35 E32 | NW | | | | |
| **6374 (B)** | Flake | Chert | 1 | Moderate Pink | Feature 1 | N35 E32 | NW | | | | |
| **6374 (C)** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | Feature 1 | N35 E32 | NW | | | | |
| **6374 (D1)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | NW | | | | |
| **6374 (D)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | NW | | | | |
| **6374 (E)** | Flake | Quartzite | 1 | Greyish Purple | Feature 1 | N35 E32 | NW | | | | |
| **6375** | Shatter | Quartzite | 1 | Dark Yellowish Brown | Feature 1 | N35 E32 | SE | | | | |
| **6376** | Flake Shatter | Quartz | 1 | White | Feature 1 | N35 E32 | SW | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6377** | Cobble | Unidentifi-ed | 1 | Solid very light grey and then some darker grey, red, and green | Feature 1 | N35 E32 | NE | 100 | 90 | 54 | Excavation form indicated calcite as material type but might actually be slate |
| **6378** | Pestle | Unidentifi-ed | 1 | Dark grey, salt and pepper colour | Feature 1 | N35 E32 | NE | 50 | 63 | ? | Length was measured from the longest section; Depth below datum not recorded on excavation forms |
| **6379 (A)** | Flake Shatter | Quartz | 1 | Yellowish Grey | Feature 1 | N35 E32 | SE | 13 | 100 | 45 | |
| **6379 (B)** | Flake Shatter | Slate | 1 | Dark Yellowish Brown | Feature 1 | N35 E32 | SE | 13 | 100 | 45 | |
| **6380 (A)** | Shatter | Quartz | 10 | Moderate Brown | Feature 1 | N35 E32 | SW | 20 | 8 | 48 | Excavation form states only 2 pieces of quartzite present? |
| **6380 (B)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E32 | SW | 20 | 8 | 48 | Excavation form states only 2 pieces of quartzite present? |
| **6381** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | 2 | 93 | 49 | Some possible charcoal present, had direct contact with specimen |
| **6382** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SW | 22 | 23 | 55 | |
| **6383** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | 47 | 83 | 54 | |
| **6384** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | 13 | 100 | 54 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6385** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | No | N35 E31 | NE | 97 | 92 | 56 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6386** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | No | N35 E31 | NE | 93 | 82 | 55 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6387** | Decayed Wood | Decayed Wood | 1 | N/A | No | N35 E31 | SW | 17 | 28 | 54 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6388** | Sample | Unknown | 1 | Mixed | No | N35 E31 | SE | 15 | 73 | 52 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6389** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | NW | 99 | 6 | 49 | |
| **6390** | Red Ochre | Red Ochre | 1 | Dusky Red | No | N35 E31 | NE | | | | Did not known it was in the bag until I tried to scrape a piece of dirt and it crumbled into smaller pieces |
| **6391 (A)** | Flake Shatter | Chert | 10 | Moderate Pink | No | N35 E31 | NE | | | | |
| **6391 (B1)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | NE | | | | |
| **6391 (B2)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | NE | | | | |
| **6391 (B3)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | NE | | | | |
| **6391 (C)** | Flake Shatter | Chert | 6 | Greyish Pink | No | N35 E31 | NE | | | | |
| **6391 (D)** | Flake | Chert | 1 | Greyish Pink | No | N35 E31 | NE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6391 (E)** | Flake Shatter | Quartzite | 6 | Pale Yellowish Brown | No | N35 E31 | NE | | | | |
| **6391 (F)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | NE | | | | |
| **6391 (G)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | NE | | | | |
| **6392 (A)** | Flake Shatter | Chert | 4 | Moderate Pink | No | N35 E31 | NW | | | | |
| **6392 (B1)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | NW | | | | |
| **6392 (B2)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | NW | | | | |
| **6392 (C)** | Flake Shatter | Quartzite | 5 | Pale Yellowish Brown | No | N35 E31 | NW | | | | One possibly a pressure flake, but platform absent |
| **6393 (D)** | Flake Shatter | Chert | 4 | Moderate Pink | No | N35 E31 | SE | | | | |
| **6393 (E)** | Flake | Chert | 1 | Moderate Pink | No | N35 E31 | SE | | | | Caution when handling |
| **6393 (F)** | Flake Shatter | Chert | 1 | Pale Red | No | N35 E31 | SE | | | | |
| **6393 (G1)** | Flake | Chert | 1 | Greyish Purple | No | N35 E31 | SE | | | | |
| **6393 (G2)** | Flake | Chert | 1 | Greyish Purple | No | N35 E31 | SE | | | | |
| **6393 (H)** | Flake Shatter | Chert | 2 | Greyish Purple | No | N35 E31 | SE | | | | |
| **6393 (J)** | Shatter | Quartz | 1 | White | No | N35 E31 | SE | | | | |
| **6393 (A)** | Flake Shatter | Quartzite | 3 | Pale Yellowish Brown | No | N35 E31 | SE | | | | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6393 (B)** | Flake Shatter | Quartzite | 4 | Greyish Red | No | N35 E31 | SE | | | | |
| **6393 (C)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | | | | |
| **6393 (I)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | | | | |
| **6393 (K)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SE | | | | |
| **6394 (D)** | Flake Shatter | Chert | 1 | Moderate Pink | No | N35 E31 | SW | | | | |
| **6394 (E)** | Flake Shatter | Chert | 6 | Moderate Orange Pink | No | N35 E31 | SW | | | | |
| **6394 (F)** | Flake Shatter | Chert | 1 | Dusky Brown | No | N35 E31 | SW | | | | |
| **6394 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N35 E31 | SW | | | | |
| **6394 (B)** | Flake Shatter | Quartzite | 4 | Pale Yellowish Brown | No | N35 E31 | SW | | | | |
| **6394 (C)** | Flake Shatter | Quartzite | 1 | Greyish Purple | No | N35 E31 | SW | | | | |
| **6395** | Core | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | NE | 59 | 84 | 43 | |
| **6396** | Core | Quartzite | 1 | Brownish Grey | No | N36 E30 | SW | 6 | 29 | 36 | Artifact was not taken out of bag for analysis due to red ochre; weight was taken with bag, another empty bag was weighed and the difference calculated |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6397** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 45 | 11 | 34 | |
| **6398** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | NW | 65 | 23 | 32 | |
| **6399** | Utilized Flake | Quartzite | 2 | Pale Yellowish Brown | No | N36 E30 | NW | 70 | 23 | 32 | No mention of a second specimen; piece probably broken off larger one |
| **6400** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SE | 27 | 63 | 38 | |
| **6401** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 30 | 27 | 32 | |
| **6402** | Shatter | Quartzite | 1 | Pale Red | No | N36 E30 | NW | 57 | 15 | 36 | Direct contact with specimen |
| **6403 (A)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | No | N36 E30 | SW | 0 | 31 | 37 | |
| **6403 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 0 | 31 | 37 | |
| **6404 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 0 | 34 | 37 | |
| **6404 (B)** | Flake Shatter | Quartzite | 1 | Dark Yellowish Brown | No | N36 E30 | SW | 0 | 34 | 37 | |
| **6405** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 6 | 25 | 38 | |
| **6406** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 13 | 29 | 36 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6407 (A)** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 4 | 39 | 38 | Unable to determine portion due to multiple breaks and no definite platform |
| **6407 (B)** | Flake Shatter | Quartzite | 1 | Pale Brown | No | N36 E30 | SW | 4 | 39 | 38 | Unable to determine portion due to multiple breaks and no definite platform |
| **6408 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 15 | 41 | 38 | |
| **6408 (B)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 15 | 41 | 38 | |
| **6409** | Flake Shatter | Quartzite | 1 | Light Brownish Grey | No | N36 E30 | SW | 17 | 36 | 37 | |
| **6410** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 21 | 29 | 46 | |
| **6411** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | No | N36 E30 | SW | 24 | 29 | 46 | |
| **6412** | Flake | Quartzite | 1 | Pale Brown | No | N36 E30 | SE | 49 | 55 | 43 | |
| **6413 (A)** | Flake Shatter | Quartzite | 4 | Pale Brown | No | N36 E30 | SW | | | | |
| **6413 (B1)** | Flake | Quartzite | 1 | Pale Brown | No | N36 E30 | SW | | | | |
| **6413 (B2)** | Flake | Quartzite | 1 | Pale Brown | No | N36 E30 | SW | | | | |
| **6414** | Utilized Flake | Slate | 1 | Dark Grey | No | N37 E32 | SE | 38 | 83 | 38 | |
| **6415** | Flake Shatter | Chert | 2 | Light Red | No | N37 E32 | SE | 9 | 75 | 42 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6416** | Flake | Quartzite | 1 | Pale Yellowish Brown | No | N36 E34 | SW | 35 | 43 | 56 | |
| **6417** | Flake | Quartzite | 1 | Pale Brown | No | N37 E34 | NE | 86 | 64 | 40 | |
| **6418** | Pestle | Quartzite | 1 | Greyish Red | No | N36 E33 | SE | 38 | 64 | 58 | Artifact was not taken out of bag (potential residue analysis on it); weight was calculated by weighing artifact with the bag, weighing another of the same bag and subtracting the difference |
| **6419** | Flake Shatter | Chert | 1 | N/A | No | N36 E33 | SW | | | | Artifacts were not separated due to the presence of red ochre mixed in with the chert microdebitage |
| **6420 (C)** | Shatter | Quartz | 1 | White | Feature 1 | N35 E33 | NW | | | | |
| **6420 (A1)** | Flake | Quartzite | 1 | Brownish Grey | No | N35 E33 | NW | | | | |
| **6420 (A2)** | Flake | Quartzite | 1 | Brownish Grey | No | N35 E33 | NW | | | | |
| **6420 (B)** | Flake Shatter | Quartzite | 2 | Brownish Grey | Feature 1 | N35 E33 | NW | | | | |
| **6421** | Flake Shatter | Quartzite | 4 | Brownish Grey | Feature 1 | N35 E33 | SW | | | | |
| **6422** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | NE | | | | |
| **6423** | Shatter | Quartz | 1 | Very Light Grey | Feature 1 | N35 E33 | ? | ? | ? | ? | #22 was not on artifact form, therefore there is no provenience information |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6424 (A)** | Flake | Quartzite | 1 | Moderate Brown | Feature 1 | N35 E33 | NW | 52 | 6 | 50 | |
| **6424 (B)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | Feature 1 | N35 E33 | NW | 52 | 6 | 50 | |
| **6425** | Flake Shatter | Quartzite | 3 | Brownish Grey | Feature 1 | N35 E33 | SW | 35 | 10 | 52 | |
| **6426** | Flake Shatter | Quartzite | 1 | Light Olive Grey | Feature 1 | N35 E33 | SW | 29 | 16 | 55 | |
| **6427** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 14 | 37 | 55 | #25 missing from unit bag |
| **6428** | Flake | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 7 | 33 | 52 | |
| **6429** | Utilized Flake | Quartzite | 1 | Light Brownish Grey | Feature 1 | N35 E33 | SE | 1 | 84 | 49 | In association with red ochre |
| **6430** | Shatter | Quartzite | 1 | Greyish Red | Feature 1 | N35 E33 | NW | 57 | 13 | 49 | |
| **6431** | Flake | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 32 | 4 | 48 | |
| **6432 (A)** | Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 32 | 19 | 56 | Artifact form stated one piece of quartzite when there is actually two |
| **6432 (B)** | Flake Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 32 | 19 | 56 | Artifact form stated one piece of quartzite when there is actually two |
| **6433** | Utilized Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 16 | 45 | 58 | |
| **6434** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SE | 13 | 93 | 50 | |
| **6435** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SE | 44 | 62 | 53 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6436** | Shatter | Quartzite | 1 | Light Brownish Grey | Feature 1 | N35 E33 | SW | 39 | 42 | 53 | |
| **6437** | Shatter | Quartzite | 1 | Brownish Grey & Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 36 | 26 | 52 | |
| **6438** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 28 | 27 | 48 | |
| **6439 (A)** | Flake | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 29 | 19 | 53 | |
| **6439 (B)** | Flake Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 29 | 19 | 53 | |
| **6440** | Flake Shatter | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | SW | 24 | 22 | 52 | Potentially distal portion (irregular break?) |
| **6441** | Flake Shatter | Quartzite | 1 | Light Brownish Grey | Feature 1 | N35 E33 | SW | 21 | 25 | 53 | |
| **6442** | Red Ochre | Red Ochre | 1 | Dark Reddish Brown | Feature 1 | N35 E33 | NW | 84 | 6 | 50 | Sample was weighed in original bag (empty bag was weighed and then difference subtracted) |
| **6443** | Flake | Chert | 1 | Greyish Red | Feature 1 | N35 E33 | NW | 76 | 20 | 47 | |
| **6444** | Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 34 | 19 | 46 | |
| **6445** | Flake Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 33 | 23 | 48 | |
| **6446** | Shatter | Quartzite | 1 | Brownish Grey | Feature 1 | N35 E33 | SW | 41 | 15 | 49 | |
| **6447 (A)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | NW | 86 | 17 | 50 | |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6447 (B)** | Shatter | Quartzite | 1 | Dark Reddish Brown | Feature 1 | N35 E33 | NW | 86 | 17 | 50 | |
| **6448 (A)** | Biface | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | NW | 60 | 11 | 53 | Artifact form states 6 pieces of quartzite present in bag, but there is actually only 5 |
| **6448 (B)** | Flake | Quartzite | 1 | Pale Yellowish Brown | Feature 1 | N35 E33 | NW | 60 | 11 | 53 | Artifact form states 6 pieces of quartzite present in bag, but there is actually only 5 |
| **6448 (C)** | Shatter | Quartzite | 1 | Light Brownish Grey | Feature 1 | N35 E33 | NW | 60 | 11 | 53 | Artifact form states 6 pieces of quartzite present in bag, but there is actually only 5 |
| **6448 (D)** | Flake Shatter | Quartzite | 2 | Pale Yellowish Brown | Feature 1 | N35 E33 | NW | 60 | 11 | 53 | Artifact form states 6 pieces of quartzite present in bag, but there is actually only 5 |
| **6449** | Flake Shatter | Quartzite | 3 | Brownish Grey | Feature 1 | N35 E33 | NW | 63 | 18 | 49 | |
| **6450 (A)** | Flake | Chert | 1 | Moderate Red | Feature 1 | N35 E33 | NW | 61 | 17 | 49 | |
| **6450 (B)** | Flake Shatter | Chert | 1 | Moderate Red | Feature 1 | N35 E33 | NW | 61 | 17 | 49 | |
| **6451** | Anvil Stone | Unidentifi-ed | 1 | Moderate Yellowish Brown and Light Brown | Feature 1 | N35 E32 | | | | | Wore examination gloves while handling in case this anvil stone is chosen for residue analysis; each stone has its own brush as to avoid as much contamination as possible |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **6452** | Anvil Stone | Unidentifi-ed | 1 | Light Brown and Yellowish Grey | Feature 2 | N34 E29 | | | | | Wore examination gloves while handling in case this anvil stone is chosen for residue analysis; each stone has its own brush as to avoid as much contamination as possible |
| **6453** | Anvil Stone | Unidentifi-ed | 1 | Light Brown and Pale Brown | Feature 2 | N32 E29 | | | | | Wore examination gloves while handling in case this anvil stone is chosen for residue analysis; each stone has its own brush as to avoid as much contamination as possible |
| **6454** | Anvil Stone | Unidentifi-ed | 1 | Moderate Yellowish Brown | No | N34 E31 | | | | | Wore examination gloves while handling in case this anvil stone is chosen for residue analysis; each stone has its own brush as to avoid as much contamination as possible |
| **6455** | Anvil Stone | Unidentifi-ed | 1 | White, Grey, Moderate Orange Pink, and Light Brown | Feature 1 | N36 E32 | | | | | Wore examination gloves while handling in case this anvil stone is chosen for residue analysis; each stone has its own brush as to avoid as much contamination as possible |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **933** | Biface | Chert | 1 | Greyish Pink | Charcoal and Decayed Wood | N32 E31 | SW | 17 | 47 | 67 | complete projectile point. Staining on both surfaces, may be exhausted. Similar shapes to other projectile points, with slightly narrower knotches. |
| **934** | Scraper | Chert | 1 | Moderate Reddish Brown | Hearth and Feature 2 | N33 E30 | SW | 3 | 28 | 59 | rectangular shaped end scraper. Constructed on a large flake. Distal end is working edge, with retouch along lateral margins. Was hafted. Stained darker near distal end. |
| **935** | Utilized Flake | Chert | 1 | Dark Reddish Brown with Light Specks | Hearth and Feature 2 | N33 E30 | SW | 20 | 9 | 57 | rectangular flake shatter, platform missing. Evidence of utilization along left flake margin. Could be a scraper preform. |
| **936** | Utilized Flake | Quartzite | 1 | Light Olive Grey | Test pit | N35 E30 | SE | 7 | 84 | 47 | proximal flake with large platform and evidence of utilization on left flake margin. |
| **937** | Utilized Flake | Quartz | 1 | Clear | Test pit | N35 E30 | SE | 26 | 73 | 48 | medial portion of linear flake. Platformed crushed and missing. Small bit of distal end missing as well. May have been hafted. |
| **938** | Biface | Chert | 1 | Greyish Red | Red Ochre | N36 E31 | NE | 88 | 90 | 42 | short projectile point, likely resharpened and exhausted. Base thinned and very narrow knotches. |

| Cat # | Object | Material | Quant. | Colour | Feature | U nit | Quad | N | E | D | Cataloguer remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **939** | Utilized Flake | Quartzite | 1 | White | Hearth and Feature 1 | N35 E32 | SW | 16 | 33 | 47 | large, chunky quartzite flake, distal tip missing. Retouch on right margin |
| **940** | Biface | Chert | 1 | Medium Bluish Grey | Red Ochre & Stones/ Feature 1 | N36 E33 | SE | 46 | 40 | 54 | large projectile point, perhaps a harpoon head? Slight indentation along lateral margins (closer to tip), broad base with narrow side notches. Tip is very fat, and this may be why specimen was discarded as it probably could not be resharpened any further at tip. thickness tapers when moving from tip to base. Possible slight crushing in notch area; slight dip along surface near notches, possible area where hafting material wore chert down? Signs of retouch on both lateral margins |